FEBRUARY, 1957
35 CENTS

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ARMED FORCES Management

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SERIAL RECORD

PUBLISHED FOR THE ARMY, NAVY, AIR FORCE, COAST GUARD AND MARINE CORPS

Admiral W. A. Schoech tells why there are

No Auto-Pilots In R and D Management

Complete contents on p. 3

New Professional Services Section . . . . see p. 21

What does it do between

HERE and...

THERE?

For the first time the behavior pattern of a free space Moving Target can be directly calibrated and immediately evaluated!

The proof of any guided missile is its performance. Not only is it necessary to provide accurate trajectory data in order to determine its effectiveness, but this must be made immediately available.

To meet both requirements is the purpose of the AN/FPS-16 instrumentation radar. This is the first radar developed specifically for Range Instrumentation. It has demonstrated its ability to track with accuracy in darkness, through clouds—under any atmospheric conditions—over extended ranges, and to yield data that can be reduced almost instantaneously to final form. This unit can also be assigned to plot performance of missile, satellite, drone and other free space moving targets.

In the past, this data has depended upon optical devices, triangulation systems with long base lines and precision limitations, modified radar equipment and data reduction methods often requiring months for computation. The immediate availability of data evaluation provided by the AN/FPS-16, now being built by RCA under cognizance of the Navy Bureau of Aeronautics for all services, is a great forward step in Range Instrumentation.

Defense Electronic Products

RADIO CORPORATION of AMERICA

Camden, N.J.

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The U.S. Navy carriers on guard against
brush fire wars are armed with Grumman aircraft,
ready as usual in quantity when needed.
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Designers and builders of the supersonic F11F-1 Tiger, transonic F9F-8 Cougar fighter, F9F-8T fighter-trainer, F9F-8P photo-recon, S2F Tracker, SA-16 Albatross rescue amphibian, metal boats, and Aerobilt truck bodies.

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into ALLIS-CHALMERS tractors

Under field conditions—where minutes are vital—effective maintenance is essential to dependable tractor performance.

Allis-Chalmers crawler tractors stay on the job longer, get back to work quicker after regular maintenance and repair, because *maintainability* is part of Allis-Chalmers advanced basic design.

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True-Dimension tracks, heat-treated and accurately machined, are designed specifically for each tractor model. Dimensions of machined surfaces and bores are held to close tolerances to assure precision fit of replacement parts, for high-quality, long-life repairs.

One-piece housing for steering clutch and final drive is line-bored to maintain alignment of shafts and gears. Mechanics can make on-the-job repairs with factory-new results.

Maintainability that meets the rigid demands of military use is only one of the outstanding advantages brought about by **Engineering in Action.**

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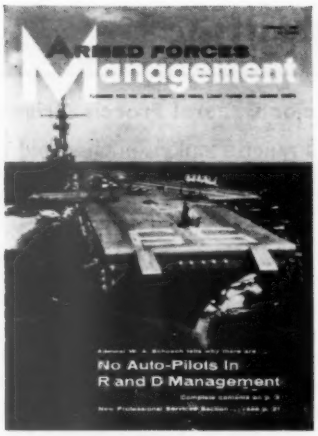
MILWAUKEE 1, WISCONSIN

ALLIS-CHALMERS



ON OUR COVER:

The U.SS. Forrestal (CVA-59), 70,000 tons of fighting ship, is the first aircraft carrier to be designed and built since World War II. Too wide to go through the Panama Canal, the ship has a flight deck which would cover four acres, is driven by four screws, each having a 22-foot propeller. This ship has been designed to a greater extent than any other to keep afloat and fighting even though severely damaged through enemy action.

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FEBRUARY, 1957

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This Month's Feature Personalities

Rear Admiral William A. Schoech

William Alton Schoech was born in Blakesburg, Iowa, on October 17, 1904. He entered the U.S. Naval Academy in 1924. Graduated and commissioned Ensign on June 7, 1928, he subsequently advanced to the rank of Captain. His selection for the rank of Rear Admiral was approved by the President on July 25, 1955.

He was awarded the Legion of Merit and cited "For exceptionally meritorious conduct . . . as Materiel and Planning Officer, and later as Chief Staff Officer to the Commander, United States Naval Aircraft, Seventh Fleet, during the period from September 11, 1942 to January 20, 1944 . . ."

In 1955 he was assigned as Assistant Chief of the Bureau of Aeronautics, for Research and Development, Navy Department.

In addition to the Legion of Merit, Rear Admiral Schoech has the American Defense Service Medal, Fleet Clasp; Asiatic-Pacific Campaign Medal; World War II Victory Medal; China Service Medal; Navy Occupation Service Medal, Asia Clasp; National Defense Service Medal; Korean Service Medal; and the United Nations Service Medal.

Married to the former Miss Barbara Bennie of Birmingham, Alabama, Rear Admiral Schoech has three children: Barbara Sinclair, William Walter, and Joseph Andrew Schoech.

General H. I. Hodes

General H. I. Hodes, Commander-in-Chief of the United States Army in Europe, graduated from the United States Military Academy at West Point in 1920 and was transferred to the cavalry from the infantry a few months later. By 1937, he had been through many cavalry assignments.

General Hodes also had the Command and General Staff School and the Army War College courses behind him when he went to Europe in 1944 to command the 28th Division's 112th Infantry Regiment in France and Belgium. After receiving his second Purple Heart, he was returned to the United States to become Assistant Deputy Chief of Staff in the Office of the Army Chief of Staff.

In September, 1950, General Hodes moved with the 7th Division to Inchon, Korea for that unit's first action against the North Koreans.

In early 1954, he was in Europe again, this time as Commanding General of the VII Corps in Germany. On February 1, 1955, he became Commanding General of the United States Seventh Army. On May 1, 1956, he was designated as Commander-in-Chief of the U.S. Army, Europe (USAREUR).

Among General Hodes' decorations are the Distinguished Service Medal with Oak Leaf Cluster; the Silver Star with Oak Leaf Cluster; the Legion of Merit with Oak Leaf Cluster; the Bronze Star; the Air Medal; the Purple Heart with Oak Leaf Cluster; the Combat Infantryman Badge; the British Distinguished Service Order, and the Korean Order of Military Merit.

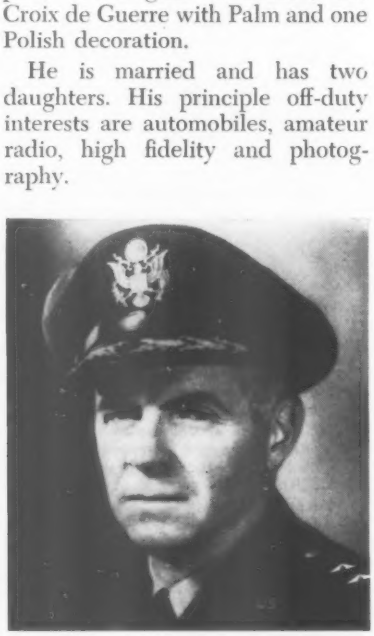
Major General Francis Griswold

Francis Hopkinson Griswold was born in Erie, Pennsylvania, November 5, 1904. He attended Columbia University and Ohio State University. He enlisted as a flying cadet on October 18, 1928, and entered the Air Corps Primary Flying School at March Field, California, graduating in June 1929. He then entered the Air Corps Advanced Flying School at Kelly Field, Texas, from which he was graduated in October 1929 and appointed a second lieutenant in the Air Reserve.

After 3 years in England, he went to Okinawa and returned to Headquarters USAF shortly thereafter. In 1946 he went to Guam to command the Twentieth Air Force. He returned to Headquarters USAF in 1948 and remained there until 1952. He was sent to England in 1952 and remained there two years as Commanding General of the Third Air Force. He moved to Offutt Air Force Base in April of 1954 to become Vice Commander in Chief of the Strategic Air Command.

He has been awarded the Distinguished Service Medal, the Legion of Merit with Oak Leaf Cluster, the Air Medal, the Order of the Knights of the British Empire, the Legion of Honor, the Croix de Guerre with Palm and one Polish decoration.

He is married and has two daughters. His principle off-duty interests are automobiles, amateur radio, high fidelity and photography.



No Auto-Pilots In Research and Development Management

By Rear Admiral
William A. Schoech

● **Both management-wise and subject-matter-wise, aeronautical research and development is as dynamic as any. Due to the fast pace of the technologies involved in aero science, the middle of the decade of the fifties has seen Naval aviation R & D adjust and realign its management practices to the times.**

RESEARCH and development has had it. It has had the glamour treatment.

The press, the Congress, the Department of Defense, industry, and the universities recently have made R & D almost as well known to Americans as hotdogs. This has come about largely through a national concern over the technological race with Soviet Russia.

But the more or less romanticized "copy" about R & D is only part of the picture. It does not concern itself much with the more prosaic phases of running a research and development program. Rather, it is more attuned to the dramatic end products such as supersonic airplanes, atomic weapons, earth satellites, and guided missiles.

Yet behind the screen of the jet sits the R & D manager. And this gentleman, whoever he is, and wherever he is, cannot push a button or twist a control which places his program on automatic pilot, with the assurance that his operation will stay on course.

He has to decide what kind of organization alignments he needs, what his goals and means of progress reporting will be, the kind of people required and how to treat them, how to fund his program, and so far into many nights.

He can effectively manage this hangarful of administrative problems, or face the surety that it will manage him.

Several Trends

Developmental thinking for tomorrow's Naval aircraft is in terms of complete weapon systems; a greater latitude in developmental design is seen for the contractor; organization of functions and people along "systems" lines; a narrowing of the margin for error in all R & D planning; and the application of electronic data processing machinery to Naval aviation's paperload are a few.

In general, all of these directions are pointed out and demanded by tremendous increases in the complexity of military aircraft and missiles as well as a step-up in the intensities and numbers of technologies brought into play. In general, all of these directions require refinements and adjustments to management control devices.

To break this generalization down, a technique which is most apt to pull the airframe and components manufacturers into more research and development work is in the area of weapon systems.

The interrelation and interdependency of complex mechanisms which when working together perform a Naval air mission is now such that the system has to be thought of as an integrated thing from the beginning.

It is no longer possible to "R & D" an airplane or missile system by separately developing each component part such as an airframe, powerplant, armament, instrumentation and so on, and then piece them together.

As a matter of evolution, the systems approach to air weapons design first became particularly apparent in the art of designing and flying air launched guided missiles; for the missile contained most all of the vital components of the airplane. But it early became clear that a missile, or an airplane-missile combination, could not be designed separately and then assembled. Any lack of compatibility between the aircraft itself on the one hand and the missile on the other spelled dismal failure for the entire weapon system. The designers had tangled with a closed loop in which each part's effect upon other parts was instantaneous and acute.

Naturally our organizations dealing with these matters had to align themselves with technology and thus they began to take on the new look. Authorities and responsibilities became tied to specific weapon systems, and the overall management pattern geared itself to the systems concept.

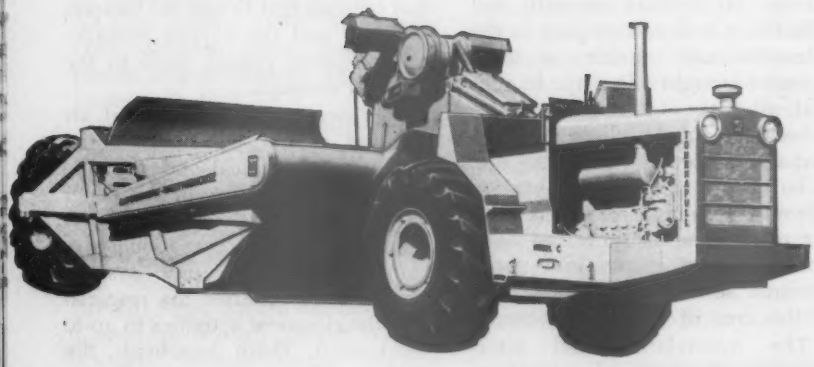
The need for a new Naval air weapon system is usually noted first by staff tactical and strategic planners in the office of the Chief of Naval Operations. The CNO issues a written operational requirement for the new system, which is the charter for research and development activities to go to work on it. These documents, the "OP requirements," are very sensitive not only to current and near future Fleet needs, but also are sensitive to potential enemy capabilities, and to technological estimates of our own future progress in the aeronautical sciences.

Preliminary design and early physical inceptions of the proposed weapon system begins in BuAer R & D where the tactical and military necessities first meet with the technical know-how. Once the feasibility and engineering limitations are known, it is time for the development program to start.

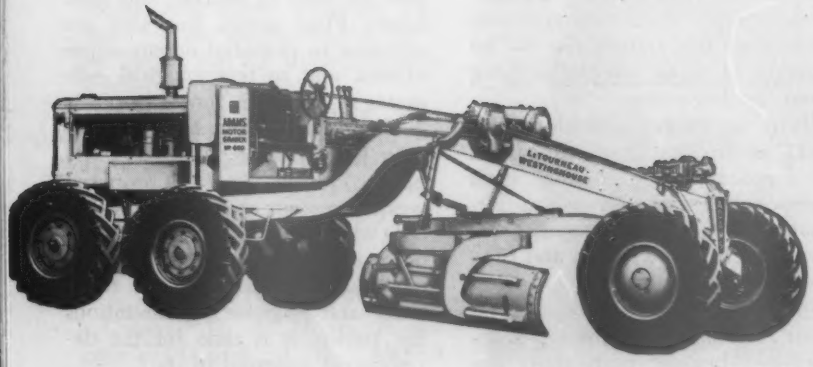
Speed and mobility of faster military

To meet today's demand for faster completion of earthmoving jobs of bigger yardage and longer hauls, you need machines with more power, higher speed, and greater capacity. You need machines that will work faster, travel faster, and operate at higher mechanical efficiency. Dependable LeTourneau-Westinghouse equipment gives you the balanced combination of power, traction, speed, and rubber-tired mobility to increase production and

Rear-Dumps — 11, 22, and 35-ton haulers have bodies with triple-layer, all-steel floor . . . haul on-or-off highways at speeds to 34.4 mph. Rigs can turn in space ¾ of their length with dump-body raised. These electric-control units dump clear over bank, pull out safely with front-wheel drive. Interchangeable bottom-dumps, side-dumps, and flatbeds also available.



Tournapull-Scrapers — 138, 208, and 293 hp models with heaped capacities to 9, 18, and 27 yds. Scrapers work and travel on-or-off highway at speeds to 29.9 mph. Electric kingpin power-steer turns prime-mover 90° . . . makes 180° turns in area narrower than machine's own length. Power-transfer differential applies up to 80% of power to drive-wheel on firmest footing. All Tournapull prime-movers interchange with rear-dumps, bottom-dumps, side-dumps, and flatbeds. Bulldozer and Snowplow available for D Tournapull.



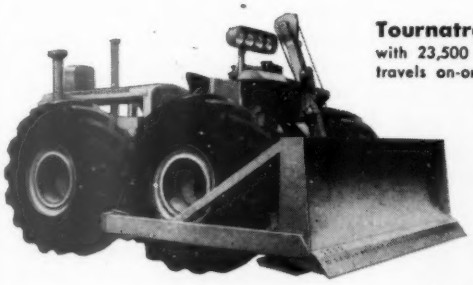
Adams Graders — Six models, 14,865 to 17,850 lbs.; 60, 80, 104, 123, 150, 190 hp. Standard heavy-duty models have 8 forward speeds to 26 mph, 4 reverse to 13 mph, and 3 optional creeper speeds. Utility grader, 60 hp, travels at 18.3 mph . . . 5 forward, 1 reverse, 4 optional creeper speeds. Torque converter Model "660" available. Snowplow, Wing, V-type Scarifier, Power-shift Moldboard, Bulldozer, Rotary Snowplow, and "Snow-Blo" attachment for optional wing also available for Adams graders.

meet challenge construction

handle these bigger jobs easier, and within shorter time limits.

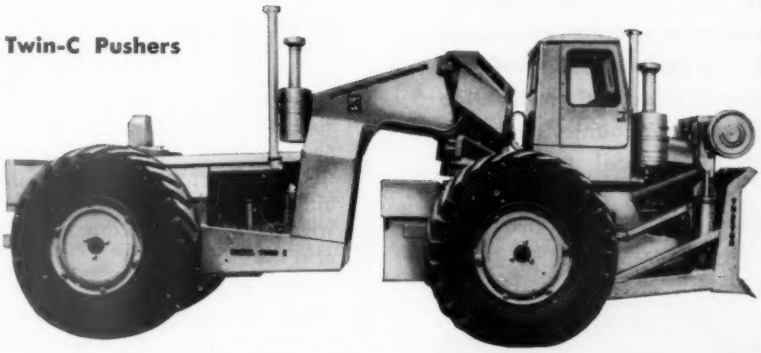
As you equip for the tremendous earthmoving work ahead, carefully study the improved LeTourneau-Westinghouse line that experience built . . . self-propelled scrapers . . . go-anywhere rear-dumps . . . rubber-tired tractors . . . heavy-duty graders. Every one of these modern machines offers you special advantages in speed and mobility that will prove *important* in handling bigger work areas with higher yardage requirements, in shortest possible time . . . to meet urgent military demands.

If your files do not include specifications on these heavy-duty LeTourneau-Westinghouse machines, we suggest you request them now for comparison with similar equipment in this field. Please address inquiries to the attention of our Government Sales Division.



Tournatractors — 208 hp Model "C" with 23,500 lbs. pull at 2 mph . . . works and travels on-or-off roads to 17.4 mph forward, 7.3 mph reverse. Push-plate, Dozer blade, Angledozer, Root rake, V-Snowplow, Snow wing, Winch, Tree Pusher, and Power-Control-Unit also available. Versatile Tournatractor dozes, clears, push-loads, skids, tows, operates electric-control scrapers. With RR coupling at rear, unit becomes *SwitchTractor*. New 208 hp, off-track *SwitchMobile* also available for RR switching. Also, giant 416 hp TWIN-C Tractor, with 65,900 lbs. drawbar pull: Loads biggest scrapers easily . . . has geared kingpin power-steering . . . travels at 20 mph forward, reverse to 5.8 mph.

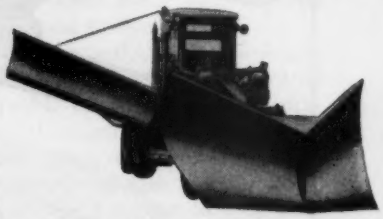
Twin-C Pushers



Snow Removal Equipment

TOURNATRACTOR with SNOWPLOW and WING

12'4" V-plow smashes banks 10' deep. 9'10½" electric-control wing available.



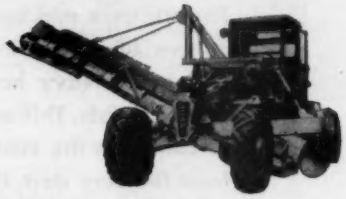
ADAMS GRADER with SNOWPLOW and WING

V-plow cuts path 9'2" wide. "Snow-Blo" fastens to end of optional wing.

Adams Loaders

TRAVELOADER

Self-propelled, belt-type machine with choice of 55 hp gasoline or 60 hp diesel engine. Picks up and loads snow, and other loose materials into trucks from windrows or stockpiles. Speeds to 26 mph; loads up to 600 yds. per hour.



ELEGRADER

Excavates, elevates dirt up conveyor for casting or loading. Attaches to Adams 440, 550, 610, 660 graders; fits Cat 12.

LeTourneau-Westinghouse also manufactures: Crawler-type scrapers, Power-Control-Units, Rooters, Sheepsfoot Rollers, Jib Cranes, and Tournarope (from ¼" to 1½" dia.).

Tournapull, Tournatractor, Angledozer, Tournarope—Trademark Reg. U.S. Pat. Off. Adams, Rooter, Fullpak, Twin C, SwitchMobile, SwitchTractor—Trademark G-1267-ML

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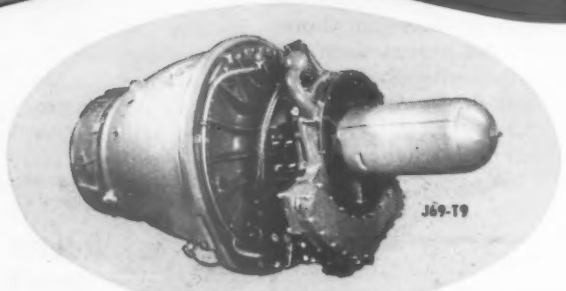
A Subsidiary of Westinghouse Air Brake Company

Where quality is a habit

TEMCO TT-1



LATEST DEFENSE ASSIGNMENT for CAE TURBINE POWER

Performance and ease of control join hands with a high degree of safety in Temco's TT-1 primary jet trainer, which the Navy has ordered into production after exhaustive tests. This modern tandem two-seater is designed to condition the student's reflexes to the piloting of jets, from the very start. It is a matter of pride and gratification to CAE that this newest addition to our country's military training equipment flies with Continental J69-T-9 gas turbine power.

CONTINENTAL AVIATION & ENGINEERING CORPORATION
12700 KERCHEVAL AVENUE, DETROIT 15, MICHIGAN

SUBSIDIARY OF CONTINENTAL MOTORS CORPORATION

Here the systems approach to Research and Development is trending towards one proprietor, who, with the mission and the operational environment in mind, will come up with an integrated military tool to perform the task at hand.

An attack weapon system involving the Douglas A4D airplane now being phased into the fleet is a recent example. It is expected that more of such developmental proprietorships of Naval air weapon systems will be assigned to private contractors.

This, to some extent, is away from historic tight controls which Naval aviation has held over the design characteristics of its aircraft. Design control has been, and still is, necessary because of ruggedness and precision factors called out by uncompromising operating conditions such as those that high performance aircraft find on carrier decks. In the letting of developmemntal managerships to industry, the Navy would still require adherence to basic Navy specifications. But the manner of accomplishing this is undergoing change.

This is most noticeable in the aircraft components and related equipment areas. If the airframe manufacturer is given more responsibility in providing the end air weapon system, where will he get the hundreds of items which he himself does not manufacture, and what is the Navy's interest in where he gets them through sub-contracted sources?

First, there are the major components not built by the airframe manufacturer such as the engine, and the fire control system. Navy R & D authority is apt to be quite specific about where these items are obtained, and what their particular configuration is. They probably will be common to several weapon systems in the Navy and also the Air Force.

The sub-contracting for other items such as communications and navigation gear, or flight instruments, could well become a matter of the airframe manufacturer's choice, although uniformity is desirable here too, if it can be had without undue penalty. The Navy would be specific about *what* is

needed, and not too fussy about *how* it is obtained.

This would be in line with present thinking which calls for extending to the prime contractor every latitude consistent with the major aim of building the best air weapon system to meet the military requirement. The one string attached is the Bureau's responsibility to insure that capable subcontractors are selected, and that their products meet specifications as well as those of the prime contractor.

For after all, it is the clear responsibility of the Chief of the Bureau of Aeronautics and his staff to insure that air weapons systems reaching the Fleet are tailored in the best possible fashion to the exact needs of the Fleet. There is a finality in this duty of the Bureau which precludes re-delegation to anyone outside the Bureau.

Another area in which the contractor who is proprietor of the air weapon system will come in for enlarged activity is the one of military intelligence and operations analysis.

If the contractor assumes a bigger role in shaping the integrated weapon system, then he must be "cut in" on all possible operational aspects. He must thoroughly understand what the operational problem is, and what the aircraft will be expected to do. This includes detail about the basic mission, operational and maintenance procedures, shipboard environment, what performances are expected of enemy aircraft, defensive capabilities of the enemy, and masses of like information down to the flying habits of different types of fleet pilots. The contractor must be briefed in great detail as to armaments the aircraft will carry and use, missiles, bombs, rockets, guns, so that he may better relate these and their effects to his system. He must become prepared to receive and use such information, and the Bureau must be prepared to extend such information in good faith.

Call for Decision

In all of these shifts in overall R & D trending, there is a call for management decisions outlining the best organization and methods to meet them. Organization, administrative patterns, management techniques and authorities must be looked at closely.

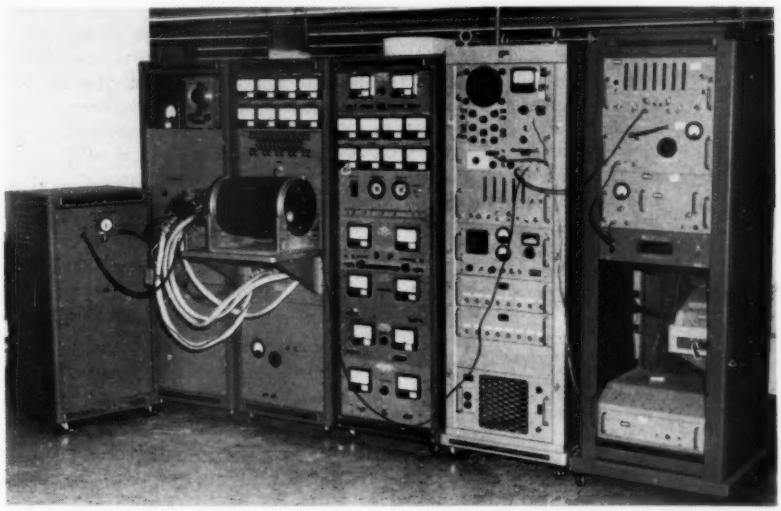
Organization charts ,at best, take the pulse at a given moment. Yesterday's chart which neatly placed radar in one box and fire control in another gives way to today's technological advances which bind the two together in a box called avionics.

Personnel factors are involved, too. The short technical labor market keeps going a perennial hot war to recruit, train, and hold scientific and engineering people. If a key man jumps to industry, the functions which have gravitated to him over the years have to be divvied up among such talent as is left.

Like most big businesses, BuAer has mountains of paperwork to move. Nearly a quarter million pieces of mail flow in and out per month. In addition there are literally tons of technical, statistical, and business documentation. Management decisions must be thought out to put all possible "paper" on EDP machinery.

The immediate effect of all such management decisions (providing they are the correct ones) is to give the R & D organization the proper administrative tools to do a better and more economical job. The longer range effect, and the ultimate objective is to provide the United States Fleet with superior air weapon systems.

The thousand and one problems of the R & D manager are not all adaptable to automatic navigation, celestial or otherwise. The snowballing pace of technological advancement demands that if he cannot get the job done in a 24 hour day, he should work nights!



Missile Tester Developed by Bendix

A semi-automatic programmed test set with digital printed readout has been developed by engineers at Pacific Division, Bendix Aviation Corporation. The test set was developed for use in final testing missile telemetering packages.

According to the Bendix engineers, the test set performs the complete final electrical test of a 177 channel FM/FM missile telemetering system in less than one hour.

The test equipment was developed because of the need for a rapid, reliable and accurate method of performing final tests on telemetering packages which could be operated by non-technical, semi-skilled personnel. Semi-automatic in nature, the equipment requires only one operator to initiate the sequence of measurements, thus releasing more technically trained personnel for vital work.

The device checks carrier frequency and power output as well as frequency and amplitude of each sub-carrier channel with respect to a set of pre-determined input signals, thus automatically analyzing the factors of linearity, sensitivity and frequency conversion.

What Management Improvement Means to Combat Effectiveness

By General H. I. Hodes

Commander in Chief, U.S. Army, Europe

It is the policy at USAREUR that:

1. The Headquarters USAREUR staff will be planners, coordinators and programmers, rather than operators or commanders.

2. Authority will be delegated and responsibilities will be decentralized to the lowest practicable levels.

3. Organizational patterns will not be imposed on subordinate commanders. They have full latitude to adjust to meet changing missions, objectives, personnel and workloads.

4. Action will be taken to eliminate restrictive controls by higher echelons and to force decision making to lower levels. For example, funds are allocated to subordinate commanders at the appropriate level. In this way, responsible commanders at all echelons are given the latitude of transferring funds among budget programs within the over-all funding program and of determining what portion of their over-all funds is to be used for personnel, material or services.

5. Reports and paper work will be cut to the minimum.

Here's why . . . . .

★

USAREUR has nothing to sell. Its end product is *combat effectiveness* and that cannot be measured by manhour-work unit ratios or by the business man's yardstick of profits versus investment. The ultimate measure of USAREUR's effectiveness is the degree to which its combat forces are ready to fight.

What, then, do the Army Management Improvement Programs—work measurement, work simplification and methods and procedures analysis, for example—have to do with a field army and the elements which support it?

THE FIRST mission of USAREUR is to deter aggression. In event of attack its mission is to defend Western Europe, as far forward as practicable in conjunction with the US Air Force and Navy and the other NATO forces. Some quarter million United States soldiers stand ready day and night to perform this mission, maintaining a twenty-four hour watch along a 435-mile frontier in Western Germany.

The Army management programs are important to USAREUR because our non-tactical activities place us inescapably in big business.

USAREUR — the United States Army, Europe — consists of the US Seventh Army and other combat and combat support units; a logistical organization which operates the supply, maintenance and distribution network in Germany and France, and installation support elements which provide housekeeping services — administrative and logistical support — for the entire command.

We operate an enormous physical plant including depots and a distribution system for the thousands of stock items required for a field army and its supporting elements; maintenance shops and repair facilities for all kinds of equipment, and housing, schools and recreational facilities for troops and their 135,000 dependents. We use, for example, 143 million square feet of building space, over 6 million linear feet of water lines and 14 million linear feet of electrical wiring. Last year we spent more than one-half billion dollars, *exclusive* of the pay of military personnel, the cost of weapons and equipment and the cost of offshore procurement.

All of this has to be managed. There are three inter-related truisms applicable to our management job.

1.

First, the paramount requirement is that USAREUR be combat ready at all times. USAREUR can cut costs to the bone, streamline its organization, methods and procedures and, measured by work measurement and cost standards, be at top efficiency but unless USAREUR maintains a consistent state of combat readiness, the responsible commanders have failed their managerial responsibilities. No matter how efficiently we conduct our administrative and housekeeping functions, we will have mismanaged the taxpayer's money unless our forces are fully trained and equipped to fight.

2.

The second proposition is the corollary of the first. It is that, under austere budgets and consumer funding concepts, it is not possible to provide our tactical forces with the resources required to maintain combat readiness unless we manage our housekeeping affairs efficiently and economically. To the extent that we waste our resources on administration and housekeeping, we deprive the tactical forces of the wherewithal—the gasoline for example—to maintain a top peak of training effectiveness. For this reason, we simply cannot tolerate waste or inefficiency in any form anywhere.

3.

The first two truisms lead inescapably to the third which is that "military command" and "military management" are inseparable, virtually synonomous. As General Maxwell D. Taylor stated in the October 1956 issue of ARMED FORCES MANAGEMENT. "Today the good commander must be the good manager." I should like to emphasize that this is true at all command levels from the squad leader on up. The good commander must be the good manager.

We now come down to the matter of how the Army management improvement programs should be used.

Since assuming command of USAREUR, I have made a series of orientation visits and inspections throughout the command. When local commanders introduced their staffs, I asked the comptrollers, "What is your job?" One replied with the single word "Management." In several other cases, I was given the answer—"My job is management" or "I am the management officer."

It struck me as significant that the commanders made no comment about this and I wondered whether they had subconsciously abdicated their management responsibilities to their comptrollers.

To whatever extent that may have been the case, it is being corrected. It has been made clear to subordinate commanders that management is inherent in command; that management cannot be isolated and made the exclusive prerogative of any one staff section in the same manner as legal determinations are made the exclusive province of the Judge Advocate.

This does not mean that I consider management assistance staffs to be superfluous appendages. They are needed, but I have a strong conviction that the world's best "management engineering" staff would not be worth the room it takes up unless the commander himself is a good manager. Stated another way, a program such as performance analysis or work measurement is valueless if the reports are prepared only to be filed. They become valuable only when they are used by the nontactical commanders at local and intermediate levels as guides to their management actions.

In USAREUR, more manhours are devoted to performance analysis reporting than to any other single report. The reported data forms the basis for BAC-PAC action on the personnel portion of our budget estimates and funding programs. It is also used in the conduct of manpower utilization surveys. This is not enough.

We obtain full value from our performance analysis reporting effort only when the reports are used as guides to management actions by the commanders themselves. Properly used, the reports raise a warning flag by identifying areas which require study—studies to determine whether a function is overstaffed or staffed with the wrong categories of personnel; or whether there are bottlenecks, controllable workload fluctuations, poor organization or perhaps physical plant inadequacies which require correction.

Nontactical commanders should keep a watchful eye on their work measurement effectiveness ratios. If low effectiveness continues over a period of months, they ought to find out whether the activity is using too many people or if it is badly supervised. If low effectiveness is not attributable to either of these things, the commander ought to see whether improvements are needed in his organization, procedures or the physical layout. Here he should call for help from his management survey and work simplification staff.

In reviewing personnel requirements, the commander should also check to see whether there is duplicate staffing of civilian and military spaces and whether it is possible to substitute civilian workers for military personnel, thus releasing the soldier for tactical units. He also should make certain that "nonproductive time" is kept within reasonable bounds.

In drawing up or reviewing budget estimates, the commander should check back on past work-

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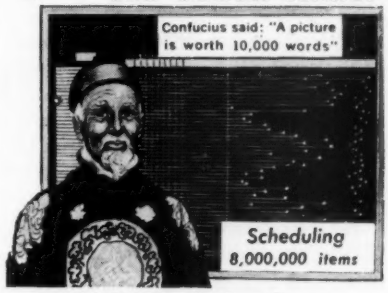

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Effective Tools for Effective Management

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loads to determine the validity of estimated future workloads. Once workloads are verified, he can apply the work measurement standard (or "norm") to estimate the total man-month requirement.

Work measurement has been cited to illustrate how the commander should use available management data in the day-by-day management of his nontactical activities. The point to be emphasized is that this data is not worth the paper that it is written on unless it is used, that is, unless the commander and staff are good managers.

This is equally true of other Army management improvement programs. Organization and procedures studies serve only to clutter up the files unless the commander uses them as the business executive should—as guides to executive action. Manpower utilization surveys, no matter how complete, and factual, are of no value unless and until translated into action by the commander. My observation has been that manpower survey effort pays for itself many times over, provided the commander reviews and acts upon the recommendations promptly. He should make certain that survey recommendations are not permitted to get "cold" because of protracted reclamas or delays in processing.

The good commander also takes the big business approach to the incentive awards and work simplification training programs. He recognizes that the benefits go far beyond the very substantial dollars and cents savings. He recognizes, too, that the returns from these programs will be directly proportional to the command support he gives them.

He makes certain that work simplification training is not treated merely as twelve hours of required exposure to a series of canned lectures prescribed by higher authority. He passes down the word that he considers work simplification training to be an investment of the trainee's time from which a definite return (at least one installable and worthwhile proposal for improvement) is expected.

As a good manager, the commander is constantly on the lookout for ways to improve his operations. He makes it known that he welcomes suggestions from both military and civilian personnel and that he is personally convinced that there isn't a single activity in his command that can't in some way be improved.

He requires that suggestions be evaluated and acted upon (disapproved or adopted) promptly. He insists upon this because he knows there is no surer way to cut off the flow of ideas than to allow suggestions to be pigeonholed.

In my view, the proposition that "the good commander must be the good manager" has a very necessary corollary.

The commander must be given authority commensurate with responsibility. He should be given his resources—his funds and personnel—with a minimum of strings and controls on how he uses them.

Unless we do these things we cannot expect the commander to be a manager. We cannot hold him responsible for the effectiveness and efficiency with which he accomplishes his mission unless we also give him unimpeded authority to manage—to control and direct his organization and to administer his resources.

Operation Christmas Stocking

General Curtis E. LeMay recently received on behalf of American taxpayers a Christmas gift valued at more than 30 million dollars. As his contribution to the gift, each SAC commander throughout the world was asked to reenlist two highly skilled technicians in each of his squadrons. The value of the gift is based upon the cost of training replacements for these 2339 men had they chosen to leave the service.

Brig. Gen. Horace Wade, SAC director of personnel, called upon the commanders to contribute to this intangible gift to General LeMay, to whom retention of skilled personnel has been a major concern. In addition to the dollar savings, retention of these men means a definite increase in the combat capability of the nation's long-range nuclear air arm.

A reenlistment rate of 50% was reached during the drive. While still short of the 65% rate required to yield the professional airman force, the new rate represents a gain of 7% over the previous high.

General LeMay is expressing his appreciation for the timely gift in a personal letter to the participating commanders, pointing out that their efforts have produced both dollar savings and a more efficient command.

Satellite Rocket Hits 4,000 mph In Test by Navy

Washington (AFPS) — A Navy Viking rocket recently traveled 4,000 mph—the fastest known speed reached by a man-made object.

The record flight took place at Patrick AFB, Fla., in the first launching trial for development of a projectile to send an earth satellite aloft in 1957 or early 1958.

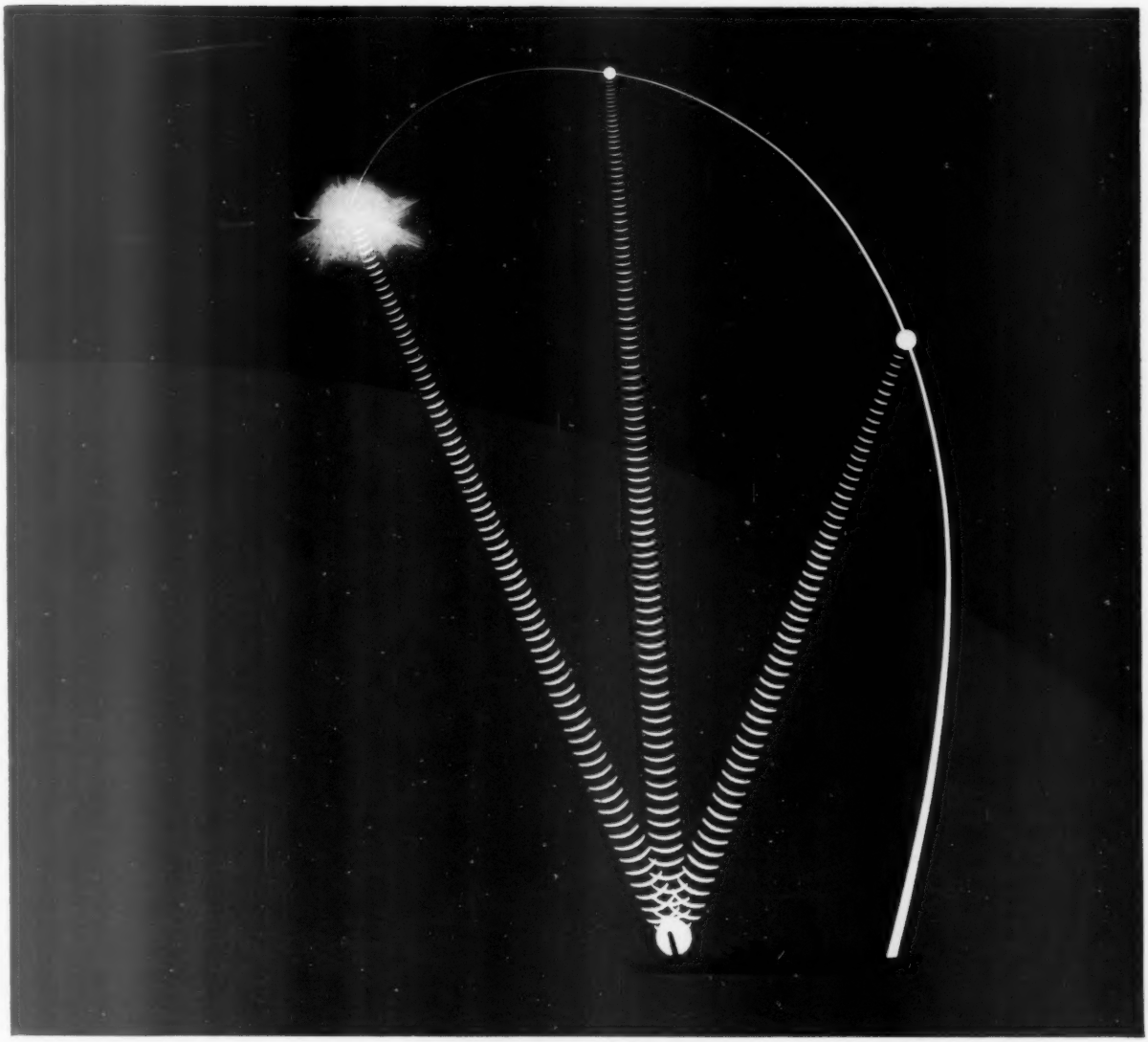
The Viking hit an altitude of 125 miles and ditched in the Atlantic Ocean about 180 miles from the launching base.

Powerful as it is, the 45-foot Viking is only the forerunner of a 72-foot three-stage rocket which will propel a tiny man-made moon into space.

Technicians for the Navy's Vanguard project have thus far produced several models of the artificial moon.

The satellite will be a goldplated magnesium sphere about 20 inches in diameter. A glittering aluminum coating atop the gold plate will make the little moon potentially visible to every person on earth.

Vanguard technicians hope the satellite will enter its orbit at an altitude of 200 miles. At this height it would probably stay aloft about 15 days, circling the globe every 90 minutes at 18,000 mph.



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PROJECT BEAM

How SAC Stays Ready

by Maj. Gen. Francis H. Griswold

THE SPEED of warfare in the nuclear air age has made obsolete all older methods of processing military information. The Strategic Air Command, with its global scope of operations, has been steadily building its combat capability for more than ten years. Early in its growth, SAC foresaw the need of speeding up the transmission and processing of information from each of its installations, both in the Zone of Interior and its outposts in North Africa, the United Kingdom, and on Guam. We knew that information on our combat capability as of 48 hours ago would not permit us to issue orders launching the SAC force a few minutes from now. We must have right at hand completely current facts for decision. We must have them daily; we must have them in usable form; and we must have them at all echelons of the dispersed SAC force. Only with usable, up-to-the minute information can we maintain the poised and ready combat force which is our greatest deterrent to aggression; our finest insurance of national security.

What have we done to insure that we have these facts for decision?

SAC's management improvement program, initiated soon after the command was created, has always concentrated on streamlining our methods in every field of work. Progress in reporting was made, but the pace of SAC's growth was obviously faster. A revolution was needed to revitalize our reporting systems. The system needed was one which could handle reporting on all our resources. Evaluation of available systems resulted in selection of electrical and electronic equipment to be installed at all bases of the command. PROJECT BEAM (Base Electrical Accounting Machine) was set up to make the conversion.

By October 1954 we had six electrical accounting machine installations in the command. Six months later, by April 1955, there were 31. On January 1, 1957, there were 43 installations. Additional ones will be placed as needed.

These installations serve multiple purposes. They provide base commanders with management data needed for their own operations. They speed the collection and processing of data for decision at all levels. As additional benefits, they stimulate the thinking of SAC people toward time-saving and money-saving practices, particularly applications of automation, and toward still more complete integrated-data processing.

We emphasize the processing aspect of the system. While timely collection of information is vital, it offers no basis for command decisions until each fact is related to all. This calls for collation of various source statistics and the application of relationship factors and formulae to put the information in usable form.

The new system has also proved its value in the various specialized activities of the command.

In the field of operations, we have current information as to the status of the force. We know what the aircraft and aircrew resources are on any given day in any given wing of the command.

Our materiel organization has current information on supply inventories and maintenance work loads throughout the command. It can also predict such things as engine replacement requirements, through the use of actuarial tables of engine life expectancy, built from field experience. One job, never before accomplished, was the accurate valuation of each Unit Authorization List in the command. These lists, called UAL for brevity, are under constant study and revision, since they reflect changing requirements in the wings. Obviously, before an audit of this magnitude could be finished by older methods, it would be obsolete and useless. Through the use of the accounting machine installations at all levels of the command, an accurate dollar valuation was established.

The new data transmission system affords us the capability of transmitting operational and intelligence statistics throughout the command. Coded card information can be transmitted in complete security, and becomes available within minutes to the using agencies.

Personnel data is another important service of the computer. It affords us constant surveillance of our entire personnel resource, in all its various aspects. Levels of training in the numerous career fields, availability of skills, areas of shortage, and other phases of efficient personnel management can be assessed from fully current information.

Financial management is also facilitated. Budget information and other fiscal data now flow through the command with the speed of electrical transmission, and in forms instantly usable by commanders at all echelons. Since SAC's capital value is now more than nine billions, with a skill value of personnel raising the total to over 15 billions, the speed and accuracy of the new system is most important.

All told, we now have 20 by-product reports regularly produced from the integrated data processed in the headquarters. In these reports lie the immediate facts for decision.

Establishment of the new system presented us with certain problems. Personnel to work with this new management tool had to be chosen for their competence in their respective fields, and for their capacity for training in the new methods. Training began simultaneously with the first installation of equipment and continued as the system grew. Within a nine-month period the system was operating.

In its basic form, the system takes information from an operating base and transmits it to a numbered air force headquarters,

which is the next higher echelon of command. Here, data from a number of bases are integrated, and in turn transmitted to SAC headquarters. Here it is related to comparable information from other subordinate commands and processed into usable form for command decisions. Reports derived from the combined information here are fed back to levels of command wherever they are needed.

Data from punched cards is transmitted electrically, reproducing cards at the receiving station. These cards feed the electronic computer, which makes the maximum possible use of repetitive data.

In addition to speed and accuracy, we find other important gains resulting from the new system. Speed means time saved. Time represents manhours, and therefore money. Our concern has always been to provide the maximum possible level of combat readiness within our financial resources. Therefore, we can regard this electrical-electronic management tool as a major factor in the efficiency of the Strategic Air Command.

We have often pointed out that we hope the unprecedented military power contained in our command will never have to be used in time of war. Since this force cannot be neutralized by an enemy attack, and since it has the undeniable capability of inflicting unacceptable damage on an attacker, we believe the force to be our greatest power for peace. But it has come to this stature only because it is powerful, and because it is ready for immediate use in war.

Therefore automation of the flow of information throughout the command has been a step toward perfecting the peace-keeping or the war-winning values of the command. It is the source of our vital facts for decision.

* * *

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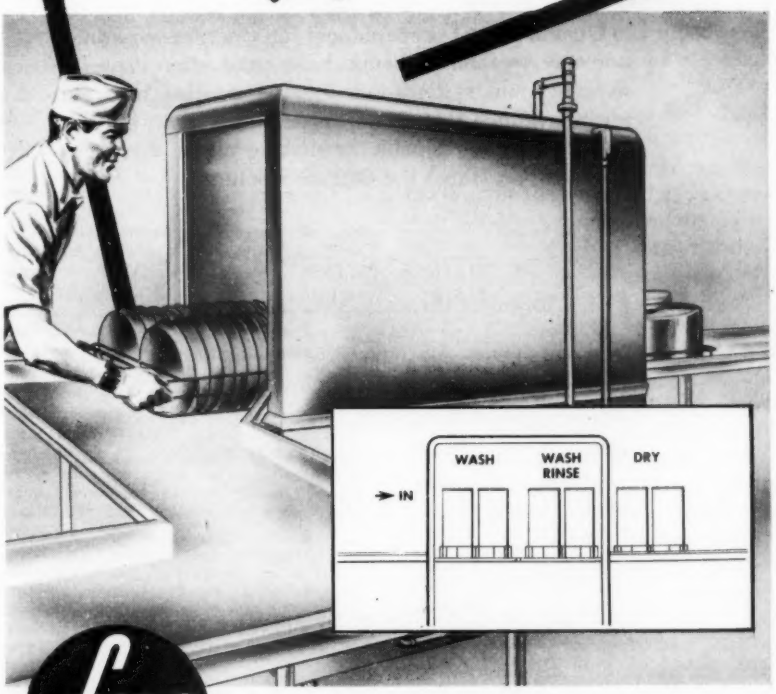

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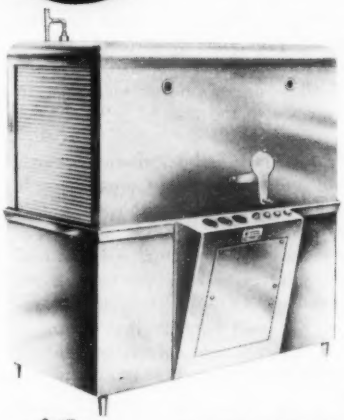

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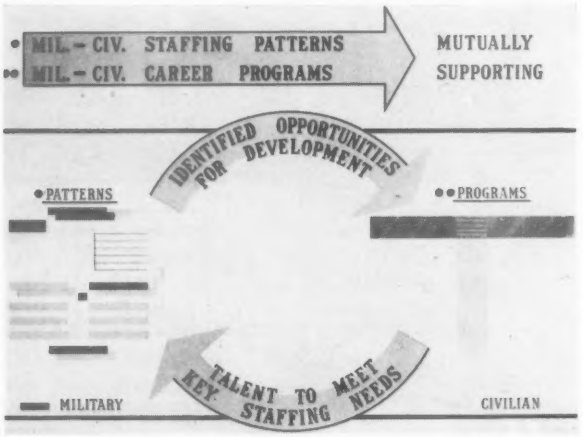
What Army Ordnance Career Planning Can Mean to You

By Truman G. Benedict

The Problem

Organizational preparedness for emergency requires not only weapons-in-being, basic production capacity-in-being, and systems-in-being for meeting new and unconventional tactical support requirements, but also *people-in-being* capable of making all of these provisions work. Here's the Ordnance solution—



If you had:

. . . organized a CONUS command structure of more than 100 installations, including depots, procurement district offices, arsenals, proving grounds, ammunition plants and works, schools, command headquarters, and other organizational elements, to provide maximum Ordnance service to the line,

And then if you had to:

. . . determine and specify for individual installations which positions should be staffed with some of the total Corps' strength of 7200 officers and warrant officers, and which with some of the Corps' 112,000 civilian employees,

. . . design and establish the career programs, military and civilian, necessary to grow the military and civilian capabilities to meet these staffing requirements, CONUS command structure and world-wide,

. . . do all of this in such a way that the systems established now will provide a sound basis for meeting wartime requirements,

How would you go about it?

Problems similar to these face every major military commander, and they are not, therefore, unique. What may be sufficiently unique to justify this article is that the Chief of Ordnance, U. S. Army, undertook to develop an integrated answer to the *total* question posed above, as it relates to the total mission of the Army Ordnance Corps.

The Plan

FIG. 1 (left) portrays graphically the plan of the integrated solution to the stated problem. It says that if Ordnance can arrive at staffiing patterns for approved organizations (left side Fig. 1) for its CONUS command elements (depots, arsenals, etc.), which organizations are in keeping with the philosophy and objectives of the entire Ordnance CONUS command structure, these patterns will then identify those positions normally to be staffed with military, and those normally to be staffed with civilians, in the approved organization.

Ordnance can by this means provide identified opportunities for development of Ordnance officers while they are in CONUS Ordnance command installations which are in keeping with the Ordnance Officer Career Program (right side, dark horizontal area) geared to Army-wide requirements (CONARC, overseas, and CONUS Ordnance command structure).

In like manner, the staffing patterns identify career opportunities for Ordnance civilians which are in keeping with Ordnance Civilian Career Programs (right side, lighter vertical area). The career programs will then over the years provide the career talent to meet the key staffing needs of Ordnance CONUS command organizations organized and staffed in accordance with the approved staffing patterns, while simultaneously developing Ordnance personnel capabilities for Army-wide needs.

The staffing patterns thus identify "billets" in the CONUS command structure for officers and for civilians which provide experience necessary to the career programs for each; the career programs are geared to capitalize upon these successive work experiences at times appropriate in the career processes planned for the Ordnance officer, and for the Ordnance civilian.

Concepts Built Into The Integrated Plan

The Need for a Complementary Military-Civilian Staff

The military rotation plan and other factors, such as nonapplicability of certain jobs for military performance, make it vitally necessary that a stable civilian staff be employed and developed by Ordnance to provide a depth of knowledge and skill within specialized subject areas while providing continuity to essential continuing operations. Through this kind of interdependent and mutually complementary staffing, Ordnance military and civilian personnel together provide a combination of continuing ability not otherwise attainable.

How Military and Civilian Staffs Complement Each Other

How a competent Ordnance officer and a competent Ordnace civilian complement each other in the management of an Ordnance enterprise may be graphically represented by a T-shaped diagram (see right side Fig. 1). Complementary staffing, such as the T-shaped figure symbolizes, is found often in situations such as a Commanding Officer and his Civilian Executive Assistant (left side Fig. 1) or a military Chief of a division and his civilian Deputy Chief, in a district, a command, or an arsenal.

In such complementary staffing situations, the Ordnance officer brings to the combination an experience and training which may be depicted as being quite *broad*. He contributes a geographical *breadth* of viewpoint developed through his rotation in assignment in CONUS and overseas. The officer's contribution is also broad *technically*. As an officer he may have had, for example, duty in an arsenal and in a depot, as well as with troops. Thus, he may bring to a procurement district assignment a background knowledge of supply and development considerably broader than that of a district civilian concerned continuously with procurement. The Ordnance officer contributes knowledge of Ordnance as a *system*. He brings from his experience with troops a first-hand knowledge and appreciation of *combat requirements* and *troop need* for Ordnance materiel. Lastly, the Ordnance officer brings to this combination of officer and civilian his continuing knowledge of Army as a *military* system.

The Ordnance career civilian contributes a complementary *depth* of knowledge (see right side Fig. 1) within one or more fields of Ordnance specialization, and a continuity of knowledge of operating policy developed through long experience within one (or a few) specialized areas and locations, usually keyed to accomplishment of a functionally specialized segment of the Ordnance mission. As indicated in the figure, the civilian's contribution is thus *deep* with respect to:

(1) His knowledge of people and relationships in a given installation and community.

(2) His detailed knowledge of operating policies and implementing standard operating procedures peculiar to the *local* installation or activity.

(3) His *stability*, his *continuity*, his *know-how* with regard to his particular job assignment.

(4) His *historical knowledge* of what has been tried before, and of that, what succeeded and what failed, which provides historical balance not otherwise possible in the military rotation situation.

(5) His professional, technical, or administrative *specialized knowledge*; knowledge in depth of his particular specialty, be it storage, Ordnance development engineering, ammunition inspection, or whatever.

From this combination of a competent Ordnance officer and a competent civilian comes a combined area of know-how which may be pictured by blending together the unique contributions of each. Their contributions are thus directly complementary, but the two are in no sense counterparts of each other; each is a product of an entirely different accumulation of experience and training—of a uniquely different career process.

Complementary Purposes of Ordnance Military and Civilian Career Programs, and Ordnance Military-Civilian Staffing Patterns

Ordnance is undertaking to establish the complementary planned career processes and the complementary CONUS work experience situations necessary to develop optimum competency in the Ordnance officer, and optimum competency in the Ordnance civilian, for the purposes of each as depicted in the T-diagram, on a continuing and constructive career basis for each.

Staffing for Single Installation

It is to some observers notorious that each installation commander perennially asserts that HIS installation is unique. Such commanders are absolutely right. This writer has yet to see an Ordnance installation which was NOT uniquely different from every other Ordnance installation. It follows therefore that the combinations of techniques and tools used in this work have varied with each installation. The pattern of effort has, however, had these general characteristics:

1. By arrangement the writer, working at the installation as staffman for the Commander, helps to picture the *existing* organization and staffing practices, and the *patterns* of these.

2. In the same role, working with the broadest practical cross-section of the senior managerial officials in the installation, military and civilian, he accumulates their comments and suggestions for improvement, for the Commander.

3. The Commander's decisions, in the form of a proposed organization and a proposed staffing policy and pattern for it, is prepared, brought forward by him, and shared by him with the five Assistant Chiefs, the Deputy Chief, and finally with the Chief of Ordnance. The resulting agreement, after approval by the Chief, is then published as a local directive.

Through such consultative management, organizations and policies which are in consonance with the integrated plan of the Chief of Ordnance, but which allow for unique installation situations, have been successfully evolved.

Staffing "Type" of Installation

The first staffing policy developed was for depots. Major Gen. J. H. Hinrichs, now Deputy Chief of Ordnance, at the time had operating control of 26 depots as Chief of Field Service Divsion, OCO. Seven depots were studied, much as described above. General Hinrichs, his staff, his depot commanders and their staffs, reviewed the resulting patterns. A proposed depot staffing policy authorizing one of two patterns for each depot

What Military-civilian Staffing Policies and Patterns Contribute

The published, approved staffing patterns:

1. Identify those positions normally for military, and those normally for civilian, staffing of an approved organization structure.
2. Eliminate "dual staffing;" i.e., the occupation of the same position by a military officer and a civilian.
3. Clarify lines of authority, responsibility and accountability by defining organizational titles and specifying their use. For example, the terms "Officer-inCharge," "Military Chief" and "Civilian Chief" are no longer used.
4. Define career "ladders of opportunity" for military, and for civilians, in each installation.
5. Eliminate intermixture of military and civilian staffing in the same line of authority and responsibility.
6. Establish identified military developmental opportunities for officer personnel in the CONUS command structure, to meet the world-wide military requirement for Ordnance officers, while establishing the maximum in clearly identified and unobstructed career and developmental opportunities for civilian employees, to meet the CONUS command structure need.
7. Provide a basis for better planning for retention of skilled know-how in periods of reduction, and for more orderly expansion in emergency.
8. Provide a better-planned basis for a more realistic Table of Distribution.

resulted. It was shared with all 26 depots for detailed critique, adjusted in accordance with majority comments, and a single policy with two patterns was authorized and published by General Hinrichs in 1953. Since re-evaluated, and with one major change adopted, the policy remains in effect today.

Using the same general method, a single staffing policy authorizing one of two patterns for each of the 14 procurement district offices was prepared and established by Maj. Gen. J. B. Medaris, then Chief of Industrial Division, OCO, in May 1954.

Lt. Gen. E. L. Cummings, Chief of Ordnance, approved and published a staffing policy and pattern for the existing organization of Office, Chief of Ordnance, in November 1954.

Officer Career Opportunities

The authorized military-civilian staffing patterns identify these kinds of career development opportunities for Ordnance officers, in CONUS Ordnance commands:

Commanding Officer: This position offers opportunity to exercise managerial ability and enterprise in command of a particular type of Ordnance command in preparation for other senior command and top staff assignments in the United States Army.

Senior operating and senior staff officers: These positions include the Assistant for Supply Operations and Assistant for Administration and Service in depots; Assistant Commanding Officer and Executive Officer, Division Chief, Inspection Division, in procurement district offices, and other similar senior managerial positions in commands and arsenals. They constitute continuing managerial and technical developmental opportunities for Ordnance field grade officers.

Staff officers to senior operating and senior staff officers: Field grade and company grade officers may be assigned on the immediate staff of any of the senior officers named above. Such duty assignments provide Senior officers with needed military assistants, while providing selected officers optimum technical and broadened managerial developmental opportunity, under military direction.

Project Officers (Project Chiefs): Officers, field or company grade, responsible for planning, supervision, coordination and accomplishment of assigned projects, usually of a research and development, industrial engineering, prototype production or engineering test, nature, and usually related to particular end items or systems of Ordnance materiel.

Project Engineers (Engineering Officers): Technically educated Junnor Ordnance officers, assigned to senior officers, are often detailed by them to selected technical work in an arsenal or proving ground such as in research and development laboratories or in an industrial engineering, prototype production or engineering test activity. These positions are normally intended to provide technical developmental opportunity to Ordnance officers of company grade.

Civilian Career Opportunities

Clearly identified, progressive career "ladders of opportunity" for civilian employees of Ordnance have been stabilized by policy for virtually all installations and activities of the CONUS command structure of Ordnance. Authorized staffing patterns establish recognizable progressions of positions appropriate for civilian employees as they develop from Junior to Intermediate to Senior levels of capability. Included are many Section and Branch Chief positions, leading progressively to senior civilian positions such as the following:

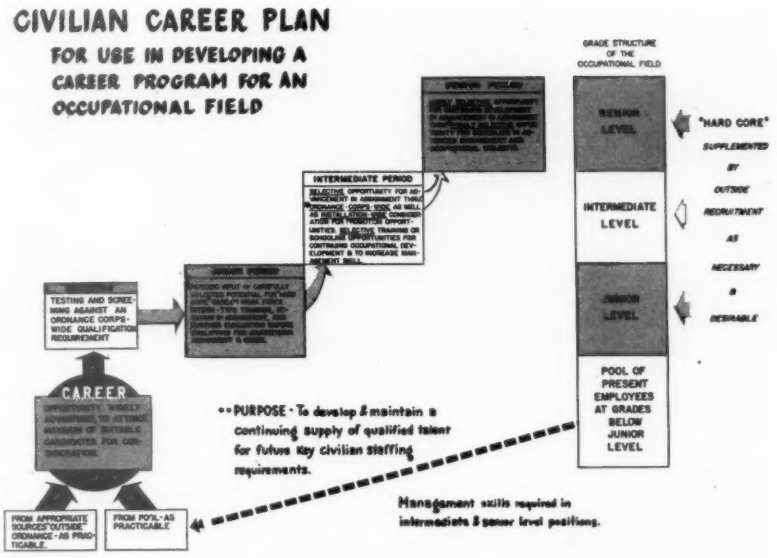
Depots: Deputy Division Chief, and Division Chief, in operating divisions; Deputy Assistant for Supply Operations; Executive Assistant to the Commading Officer.

District Offices: Deputy Division Chief, and Division Chief, positions in operating divisions; Civilian Executive Assistant to Commanding Officer.

Arsenals: Director, Technical Director, and Associate Director positions, in R&D laboratories; Chief, or Deputy Chief, of operating or special mission divisions; Executive Assistant positions to Commanding Officers or Commanding Generals.

Commodity Commands: Executive Assistant, and Associate Chief, positions in operating divisions; Executive Assistant, and Chief Engineer positions, to Commanding Generals.

In addition, many staff and services offices of Ordnance installations and activities, such as Comptroller,


CIVILIAN CAREER PLAN
FOR USE IN DEVELOPING A CAREER PROGRAM FOR AN OCCUPATIONAL FIELD
GRADE STRUCTURE OF THE OCCUPATIONAL FIELD
SENIOR LEVEL
INTERMEDIATE LEVEL
JUNIOR LEVEL
POOL OF PRESENT EMPLOYEES AT GRADES BELOW JUNIOR LEVEL
"HARD CORE" SUPPLEMENTED BY OUTSIDE RECRUITMENT AS NECESSARY & DESIRABLE
INTERMEDIATE PERIOD
TESTING AND SCREENING AGAINST AN ORDNANCE CORPS-WIDE QUALIFICATION REQUIREMENT
CAREER
FROM APPROPRIATE SOURCES OUTSIDE ORDNANCE - AS PRACTICABLE
FROM POOL - AS PRACTICABLE
••PURPOSE - To develop & maintain a continuing supply of qualified talent for future Key civilian staffing requirements.
Management skills required in intermediate & senior level positions.

Civilian Personnel, and Legal Offices, are headed by civilians.

Civilian Career Plan

The Ordnance Civilian Career Plan, as depicted in Figs. 2A & 2B, is one of several tools used in designing career programs for the vertical specialist civilian career occupational fields of the T-diagram in Fig. 1.

After the continuing requirements of an identified Ordnance civilian career field have been determined, the principles and processes of the Ordnance Civilian Career Plan are applied to the problem of generating a continuing flow of qualified civilian career talent to sustain the minimum continuing requirement for the particular career field.

This means the orderly application of an orderly career process in the planning of career programs carefully tailored to meet identified future requirements for highly qualified civilian personnel in specialized civilian career fields.

Using the Civilian Career Plan and Related Conceptual Tools, to Design Occupational Career Programs.

Responsibility for designing and activating civilian career programs for Ordnance mission occupational career fields has been assigned to elements of OCO which have supervision of those functions and therefore have a "bread and butter" interest in successful staffing of the particular field of work.

A device for melding the capabilities of designated occupational specialists, with those of personnel specialists (placement, training, employee utilization, and salary and wage administration) has been found in the Career Planning Task Group mobilized to design a particular career program.

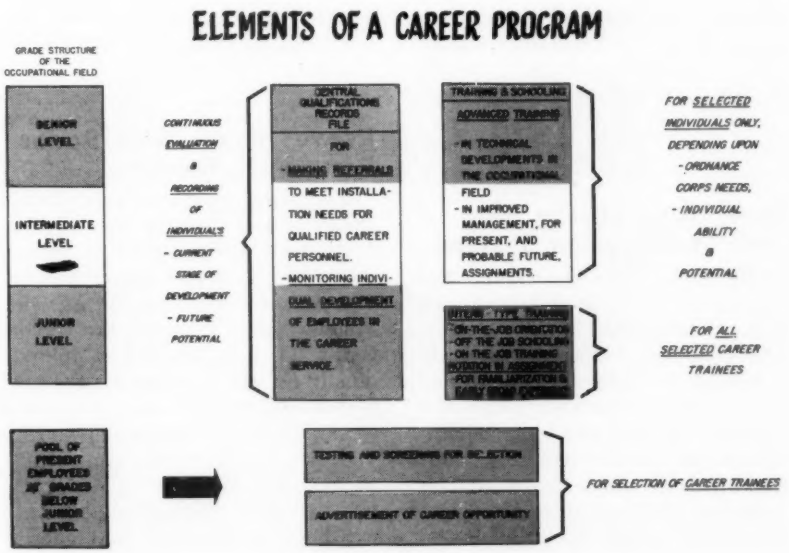
The assigned mission of the Task Group is to apply the concepts of the Ordnance Civilian Career Plan to the requirements of the designated career field, and to prepare, in writing, the Ordnance Civilian Career Program for the designated field of work. A Task Group Handbook has been published to facilitate this planning process.

Currently, Ordnance has two occupational civilian career programs in operation, two others completely planned and being implemented, and planning of career programs in eleven other selected career fields is in process.

The essential feature of each Ordnance civilian career program is that it is ORDNANCE-CORPS-WIDE, in selection of career trainees, in their internship training, in opportunities for development and growth, and in opportunities. for advancement. Army civilian personnel management is admirably dedicated to good management of the individual *at his place of work*, i.e., his current job situation, and is therefore individual-centered, supervisor-centered, and installation-centered. Career planning, in the Ordnance instance, had to be *Ordnance-centered*, to afford career individuals *Ordnance-wide opportunities*; it therefore required Corps-wide planning at the Chief of Ordnance level. These two facets of sound personnel administration, it should be noted, are not substitutes for each other; *both* are necessary to successful staffing, and to success in affording the most rewarding work experience possible to deserving civilians of Army Ordnance.

Conclusion

Put in yet another way, Ord-


ELEMENTS OF A CAREER PROGRAM
GRADE STRUCTURE OF THE OCCUPATIONAL FIELD
SENIOR LEVEL
INTERMEDIATE LEVEL
JUNIOR LEVEL
CONTINUOUS EVALUATION & RECORDING OF INDIVIDUAL'S - CURRENT STAGE OF DEVELOPMENT - FUTURE POTENTIAL
CENTRAL QUALIFICATIONS RECORDS FILE FOR - MAKING REFERRALS TO MEET INSTALLATION NEEDS FOR QUALIFIED CAREER PERSONNEL. - MONITORING INDIVIDUAL DEVELOPMENT OF EMPLOYEES IN THE CAREER SERVICE.
TRAINING & SCHOOLING
ADVANCED TRAINING - IN TECHNICAL DEVELOPMENTS IN THE OCCUPATIONAL FIELD - IN IMPROVED MANAGEMENT, FOR PRESENT, AND PROBABLE FUTURE, ASSIGNMENTS.
FOR SELECTED INDIVIDUALS ONLY, DEPENDING UPON - ORDNANCE CORPS NEEDS, - INDIVIDUAL ABILITY & POTENTIAL
INTERN - TYPE TRAINING - ON-THE-JOB ORIENTATION - OFF THE JOB SCHOOLING - ON THE JOB TRAINING ROTATION IN ASSIGNMENTS - FOR FAMILIARIZATION & EARLY PROMOTIONS
FOR ALL SELECTED CAREER TRAINEES
POOL OF PRESENT EMPLOYEES AT GRADES BELOW JUNIOR LEVEL
TESTING AND SCREENING FOR SELECTION
ADVERTISEMENT OF CAREER OPPORTUNITY
FOR SELECTION OF CAREER TRAINEES

nance is out to quality-staff all of its far-flung institutions—whether under command of the Chief of Ordnance, or representing Ordnance under a Field Commander—with capable, well-motivated people, military and civilian, who find it a rewarding experience, in their "pursuit of happiness," to seek careers in Army Ordnance.

The integrated plan describes the system for bringing this about.

The integrated CONUS command structure, and the integrated military-civilian staffing patterns and career programs, are some of the necessary instruments.

Achievement of the purposes of the integrated plan will require time, and persistent, intelligent and correlated effort. But when it is achieved, it will provide every Ordnance officer with the opportunity and the means for more foresighted planning and better realization of his individual career plan within the Ordnance officer career system.

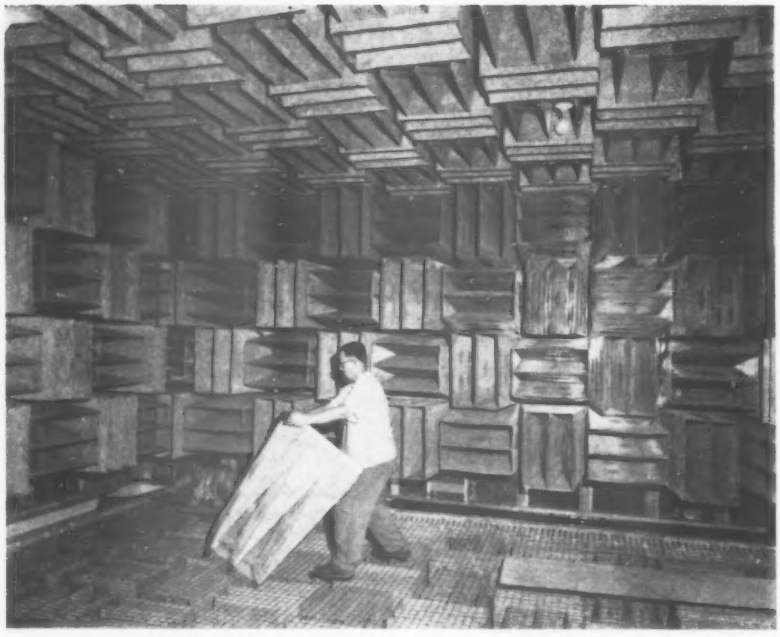
It will open up for civilian career employees the picture of Ordnance-wide career opportunities to which they can aspire, and of orderly cumulative systems of Ordnance assistance to help them prepare themselves to achieve their aspirations.

For Ordnance as a Corps, it will reap the benefits of better qualified and better motivated career people, military and civilian, who see more clearly their complementary roles in Ordnance ,and who see in these roles reasons for individual teamwork heretofore cloudy and ill-defined. All of this means achievement of a key goal necessary to a progressive and better-managed Ordnance Corps—and therefore a more efficient and more effective contribution to the defense of the Nation.

New Navy Missile Ship Has Stabilization System

Boston (AFPS)—The Gyatt, first Navy guided missile destroyer, also is the first warship to have a stabilization system added to her hull.

Similar to stabilizers already in use on many passenger liners, the system consists of two large, square retractable fins extending from midship well below the waterline, designed to eliminate much of the the typical rolling of small ships.



The final row of AN-ECK-OIC® Wedges is being installed above the Spring Tension Cable Floor. These AN-ECK-OIC® Wedges are designed for a fairly low frequency cut-off as shown by their length in comparison to the man handling the Wedge. Sound absorbtion is about 99%.

The Quietest Place in Washington

A special sound absorbing room was recently completed at the National Bureau of Standards by the Eckel Corporation, Cambridge, Mass.

Called an anechoic chamber, this unique laboratory was constructed for the purpose of studying sound sources, measuring device noises, and performing audio equipment calibration and research work.

Designed for scientific research and development, the anechoic chamber will be used for experiments requiring an environment essentially free from echoes. An example is the study of the characteristics of a sound source, such as a loud speaker. In this experiment reflections from walls, ceiling, or floor would be received by the microphone and give rise to erroneous results.

The building that houses the anechoic chamber is 40 x 50 feet in size. It not only houses the anechoic chamber but also a small machine and acoustic laboratory areas. To provide accoustical absorption the room is lined with glass fiber wedges, AN-ECK-OIC® Wedges 40 inches in depth.

Reeves Builds New Radar For Gyatt Terrier

The radar guidance equipment designed and built by the Reeves Instrument Corporation, a subsidiariy of Dynamics Corporation of America, for the Terrier Missile System installed aboard the U.S.S. Gyatt, the U.S. Navy's first guided missile destroyer, combines for the first time a gun fire control system with radar guidance equipment.

A slim needle-nosed supersonic weapon, the "Terrier" is designed to intercept aircraft under all weather conditions and by night as well as by day. While similar to the radar guidance equipment pioneered and built by Reeves for the "Terrier" systems installed aboard the cruiser, the U.S.S. Boston, and earlier models developed by Reeves for the U.S.S. Mississippi and the converted seaplane tender, the Norton Sound, it is more compact, has greater range and precision and is capable of selfmonitoring. It also requires fewer men for its operation even though the missiles handled are of the same size as those employed on the larger craft.

Professional Services

Plan *Your* Future Now
. . . Here are the Opportunities
. . . and their Locations

In this professional vacancy list published each month ARMED FORCES MANAGEMENT invites the listing of any position, *GS-9* or above. This cut-off point was established on the basis that GS-9 and above positions entail as a major portion of the duties management responsibilities. Space limitations in this Department will preclude so-called "wholesale listings". Apply direct to the installation where the vacancy exists. For information about other jobs, write or visit the nearest military installation.

Title and Location	Grade	Remarks
OMAHA DISTRICT, CORPS OF ENGINEERS		
1709 Jackson Street, Omaha, Nebraska		
Civil Engineer (Roads and Railroads)	GS-9 and 11	
Civil Engineer (Estimates)	GS-9 and 11	
Civil Engineer (Specifications)	GS-9 and 11	
Civil Engineer (Sanitary)	GS-9 and 11	
Landscape Architect	GS-9 and 11	
Architect	GS-9 and 11	
Geologist (Engineering)	GS-9	
Structural Engineer (Hydraulic Structures)	GS-9, 11 and 12	
Materials Engineer	GS-9 and 11	
Hydraulic Engineer (Hydroiogic Investigations)	GS-9 and 11	
Civil Engineer (Soils Mechanics)	GS-9 and 11	
Const. Mgmt Engineer (Waterways)	GS-9	
Civil Engineer (Design)	GS-11	
1st COAST GUARD DISTRICT		
Boston, Massachusetts		
Marine Engineer	GS-9	
2nd COAST GUARD DISTRICT		
St. Louis, Missouri		
Civil Engineer	GS-9	
Electronic Engineer (Radio)	GS-9	
3rd COAST GUARD DISTRICT		
New York, New York		
Civil Engineer	GS-11	2 vac.
ACIC, Washington, D. C.		
Training Officer (General Fields)	GS-11	
ACIC, St. Louis, Mo.		
Cartographer	GS-9	11 vac.
Analytical Stat Engineer	GS-11	
Altus AFB, Okla.		
Electrical Engineer	GS-11	
Organization & Methods Examiner	GS-9	
Amarillo AFB, Tex.		
Clinical Psychologist (Adult)	GS-12	
Social Science Analyst	GS-11	
Ardmore AFB, Okla.		
General Engineer	GS-9	
Supervisory Accountant	GS-9	
Supervisory Cost Accountant	GS-9	
Barksdale AFB, La.		
General Engineer	GS-11	
Supvsy Firefighter (Gen)	GS-9	
Biggs AFB, Tex.		
Architectural Engineer	GS-11	
Supervisory General Engineer	GS-11	
Brookley AFB, Ala.		
Industrial Defense Advisor	GS-12	
Contract Specialist (Price Analysis)	GS-12	
Supervisory Procurement Analyst	GS-12	
Systems Development Analyst (Elec Processing Data)	GS-11	
Purchasing Agent	GS-11	
Contract Specialist	GS-11	
Contract Specialist (Price Analysis)	GS-11	
Management Operations Analyst	GS-11	
Cost Accountant	GS-9	
Organization & Methods Examiner	GS-9	2 vac.
General Supply Officer (Mgmt & Proc)	GS-9	
Systems Accountant	GS-9	
General Supply Officer (Work Msrmt)	GS-9	
Requirements Officer	GS-9	
Purchasing Officer	GS-9	
Distribution Officer	GS-9	
Management Operations Analyst	GS-9	
Electronic Processing Eqpt Programmer	GS-9	
Purchasing Agent	GS-9	
Metallurgist	GS-9	
Communications Specialist (Telephone)	GS-9	
Electronic Engineer (Gen)	GS-9	
Bryan AFB, Tex.		
Architectural Engineer	GS-9	
Carswell AFB, Tex.		
Gen Engineer (Elec & Mech)	GS-9	
Civil Engineer	GS-9	
Supvy Production Spec (Gen)	GS-9	
Castle AFB, Cal.		
Research Psychologist	GS-12	2 vac.
Chanute AFB, Ill.		
Psychologist and Experimental Psychologist	GS-12	
Psychologist and Experimental Psychologist	GS-11	
Electronic Engineer (Radio)	GS-11	
5th COAST GUARD DISTRICT		
Norfolk, Virginia		
Civil Engineer	GS-9	
Electronic Engineer (Radio)	GS-9	
7th COAST GUARD DISTRICT		
Miami, Florida		
Electrical Engineer	GS-9	
9th COAST GUARD DISTRICT		
Cleveland, Ohio		
Architect (General)	GS-11	
Marine Engineer	GS-11	
Civil Engineer	GS-9	2 vac.
Mechanical Engineer	GS-9	
12th COAST GUARD DISTRICT		
San Francisco, California		
Electrical Engineer	GS-11	
17th COAST GUARD DISTRICT		
Juneau, Alaska		
Civil Engineer	GS-9	
WASHINGTON RADIO STATION,		
Alexandria, Virginia		
Electronic Engineer (Radio)	GS-9	
Maintenance Engineer	GS-9	
U. S. COAST GUARD		
Headquarters		
Washington, D. C.		
Aircraft Design Engineer	GS-12	
Electrical Engineer	GS-11	
Structural Engineer	GS-11	
Marine Engineer	GS-11	
Naval Architect (Air Conditioning Systems)	GS-11	
Structural Engineer	GS-9	
Naval Architect	GS-9	2 vac.
Ent Air Force Base, Colo.		
Air Technical Intelligence Specialist (Aircraft & Guided Missiles)	GS-14	
Management Analyst	GS-13	
Operations Analyst	GS-13	5 vac.
Operations Analyst	GS-13	2 vac.
Architectural Engineer (Specifications)	GS-12	
Cost Analyst	GS-10	
Communications Rate Examiner	GS-9	
Gadsden AFS, Ala.		
Systems Development Analyst (Elec Processing Equipment)	GS-11	
Supv Maintenance Technician (Elec Generators & Power Units)	GS-10	
Logistics Officer	GS-9	2 vac.
Organization & Methods Examiner	GS-9	
Maintenance Technician (Aircraft Electrical Generating Equip)	GS-9	3 vac.
Maintenance Technician (Utility Electrical Generating Equip)	GS-9	2 vac.
Maintenance Technician (Furniture and Fixtures)	GS-9	
Maintenance Technician (Agriculture Equipment)	GS-9	

Business and Finance

by W. Mac Stewart

1—What are market "averages"?
2—How are they computed?
3—How accurate are they?

A LITTLE more than two years ago (November, 1954), the financial pages of the nation's newspapers featured headlines, "Market Makes New All-Time High," or "Stocks Pushed Thru '29 Levels." Those unfamiliar with market jargon may well have wondered just what those headlines meant, and asked themselves, "What's it all about?" "How do these Wall Street people know that the market is at a new high?" "How do they measure the market?"

1—The answer to these questions could lead into statistical hocus-pocus. However, the fact of the matter is that market levels are measured by the same method used in gauging any large group of objects or figures: by constructing a statistical "average" from a selected segment. Naturally, with more than 1,000 different common stocks on the New York Stock Exchange, any average taking into account *all* of the stocks would be a practical impossibility from the standpoint of speedy computation. Therefore, market averages must include relatively few stocks, with selection of individual issues determined by the purpose of the particular average.

There are many stock market averages in use today. Some are compiled hourly, others daily, weekly, or monthly. Publishers of these various averages include news reporting organizations, financial and statistical reporting companies, investment counselling concerns, independent newspapers, business magazines, and many others. The existence of this myriad of market averages is only natural, because the stock market is becoming more interesting to more people all the time. Even the government, through the Securities and Exchange Commission, has an index of stock market prices.

Some averages are based on as few as 20 issues, while others may use as many as 400. Most of the various averages are essentially arithmetical in nature, although several geometric averages are published. Some introduce in their computation a weighting factor, such as the number of shares outstanding of each stock used. Actually, by their very nature, all the averages are weighted to some degree, whether or not such weighting is deliberate.

The most widely known averages, and the ones most frequently referred to, are the Dow-Jones Averages, compiled by Dow-Jones and Company, Inc., publishers of the Wall Street Journal. Some market technicians believe that the Dow-Jones Averages lack features thought desirable in market averages. This partially explains the existence of many other averages. Nevetheless, the Dow-Jones remain the most widely quited averages in describing market levels and movements.

There are four Dow-Jones stock averages: The Industrial Average, the Rail Average, the Utility Average, and the 65-Stock Average. The Industrial Average is composed of the prices of 30 industrial corporations, including 22 manufacturers, five natural resource companies (oil and mining), two retailing concerns, and American Telephone and Telegraph. The Rail Average is formed from the prices of 20 railroad stocks, and the Utility Average from 15 gas and/or electric public utilities. Finally, the 65-Stock Average uses all the stocks in the three separate averages.

The Dow-Jones Industrial and Railroad Averages are generally considered as dating from 1897, and the Utility Average was started in 1929. Thus they have the longest record of any market averages in wide uses today—an important factor in their popularity. Naturally, many changes have been made through the years, both in the number and the identity of the individual stocks used. At first, only 12 stocks were used in the Industrial Average. It was later increased to 20, and in 1928, to 30, where it remains today. From time to time there are deletions and substitutions of individual stocks. A list of the stocks currently used in the Average is published periodically in the Wall Street Journal.

2—Incidentally, the fact that a company is or is not included in the Average has nothing to do with its investment quality. Many of the stocks most widely held by institutional investors are not included in the list. And it must be remembered that *no* group of 30 stocks can typify the more than 1,000 common stocks on the Exchange. It is quite possible for the Average to show a rise, while the majority of stocks decline, or vice versa. Actually, a broader scope of 80, 100, or more carefully selected industrial stocks, such as are in the portfolio of investment companies and similar large institutional investors, may give a closer index to general market movement.

Financial Editor W. Mac Stewart, one of the nation's foremost securities analysts, is vice-president—research, Hamilton Management Corp. In addition to presenting a monthly financial editorial written expressly for the Career Officer, Mr. Stewart will personally answer your questions on investment problems. Be sure to include your mailing address, as inquiries will be answered by mail, rather than on this page.

Some claim that the D-J Industrial Average lacks breadth and market representation, since it contains only 3% of the more than 1,000 common stocks listed on the N. Y. Exchange; has no representation in several major industries—drug and textile, to mention two; and is composed largely of "blue-chip" stocks. While these objections may have foundation, it is certainly necessary to have some quick "rule of thumb" for measuring market movements, and the D-J Industrial Average does provide a reasonably accurate yardstick for gauging the opinions of the investing public.

3—In the publication of any market average, it is obvious that the continuity of the average must be maintained despite complexities that change market prices, such as stock dividends, rights to stockholders, and stock split-ups. The D-J Industrial Average is computed first by adding the per-share market price of the 30 stocks, then dividing to get the average share price. However, it's not quite that simple. For instance, if a stock is split, say, 2-for-1, and its market price is halved, the Average would register a sharp drop if no adjustment were made. Originally, such adjustments were made by multiplying the prices of individual stocks that had been split. In 1928 this procedure was changed. Instead of using multiples, then dividing the total sum by the number of stocks, a new divisor was computed that gave the same result without using multiples of prices of individual stocks. When the number of stocks was increased to 30, and several substitutions made, the total of the 30 stocks was divided by the new divisor—16.67.

Since that time, deletions and substitutions of stocks, and capitalization changes, have reduced the divisor in the D-J Industrial Average to 4.566 at the time of this writing. A 4-for-1 split of Bethlehem Steel will probably become effective in trading this month, which will reduce the divisor further—to approximately 4.25, depending on the level of the Average at that time.

On September 3, 1929, the Dow-Jones Industrial Average ended the market day at the level of 381.17—a new high up to that time. On November 23, 1954, the Average closed at 382.74—and the newspapers had their headlines. During 1956 the Average ranged from a closing high of 521.05 to a low of 462.35. It appears in 1957 the Average will reach new highs again.

What does this mean to the average investor? Very little. The average investor who is setting aside his money on a long-range accumulation basis can, for all practical purposes, ignore the market "averages." The daily fluctuations of market levels have little or no bearing on a long-range investment program, and, in fact, can tend to confuse or mislead any but the most seasoned and market-wise investors. Over the long term, the trend of the Averages remains upward.

The Dow-Jones Averages are computed hourly. When you ask a broker, "What's the market doing?" he'll reply something like this: "Industrials up 1.13, rails up 0.35, and utilities up 0.22." He is quoting the Dow-Jones Averages—a "rule of thumb" for measuring investor sentiment and market action.

If you have investment questions you'd like to have answered personally by mail, send them to FINANCIAL EDITOR, ARMED FORCES MANAGEMENT, 208 South Second Street, Rockford, Illinois. Or if you have suggestions for future financial articles, let us know what you'd like to see on this page.

Gyroscope Plans Set for 12 Units

Washington (AFPS)—The Armys' 4th Armored Div., now at Ft. Hood, Texas, will exchange stations next November with the 2nd Armored Div., now in Germany, under Operation Gyroscope.

The Army has also named five non-divisional units to rotate to Germany in 1957 and early 1958. They are:

- Hq. and Hq. Det. of the 85th Chem. Bn. at Ft. McClellan, Ala., to relieve similar sections of the 1st Chem. Bn. next July 15.
- The 546th FA Bn., Ft. Lewis, Wash., to relieve the 519th FA Bn., Oct. 15, 1957.
- The 2nd Armored Cav. Regt., Ft. Meade, Md., to replace the 3rd Armored Cav. Regt., Feb. 15, 1958.
- The 36th FA Bn., Ft. Sill, Okla., to take over from the 291st FA Bn., Feb. 15, 1958.
- The 269th FA Bn., Ft. Carson, Colo., to replace the 775th FA Bn., Feb. 15, 1958.

New Slingshot-type Device Speeds Navy Frogmen Rescues

A slingshot-type device, which catapults a swimmer from the water to a fast-moving boat in three seconds or less, is the U. S. Navy's spectacular new method of speeding up the rescue of frogmen returning from demolition missions.

The new system was designed and developed by All American Engineering Company of Wilmington, Del., in cooperation with the Amphibious Branch of the Office of Naval Research, and will soon become operational. Its performance has been proved through a series of exhaustive tests by the manufacturer on Indian River inlet located in lower Delaware.

● **When the people in the training department at Eastern Gas and Fuel Associates (Boston, Mass.) developed a twenty-hour course on work simplification, they reserved eight hours of instruction on how to sell ideas to the boss.**

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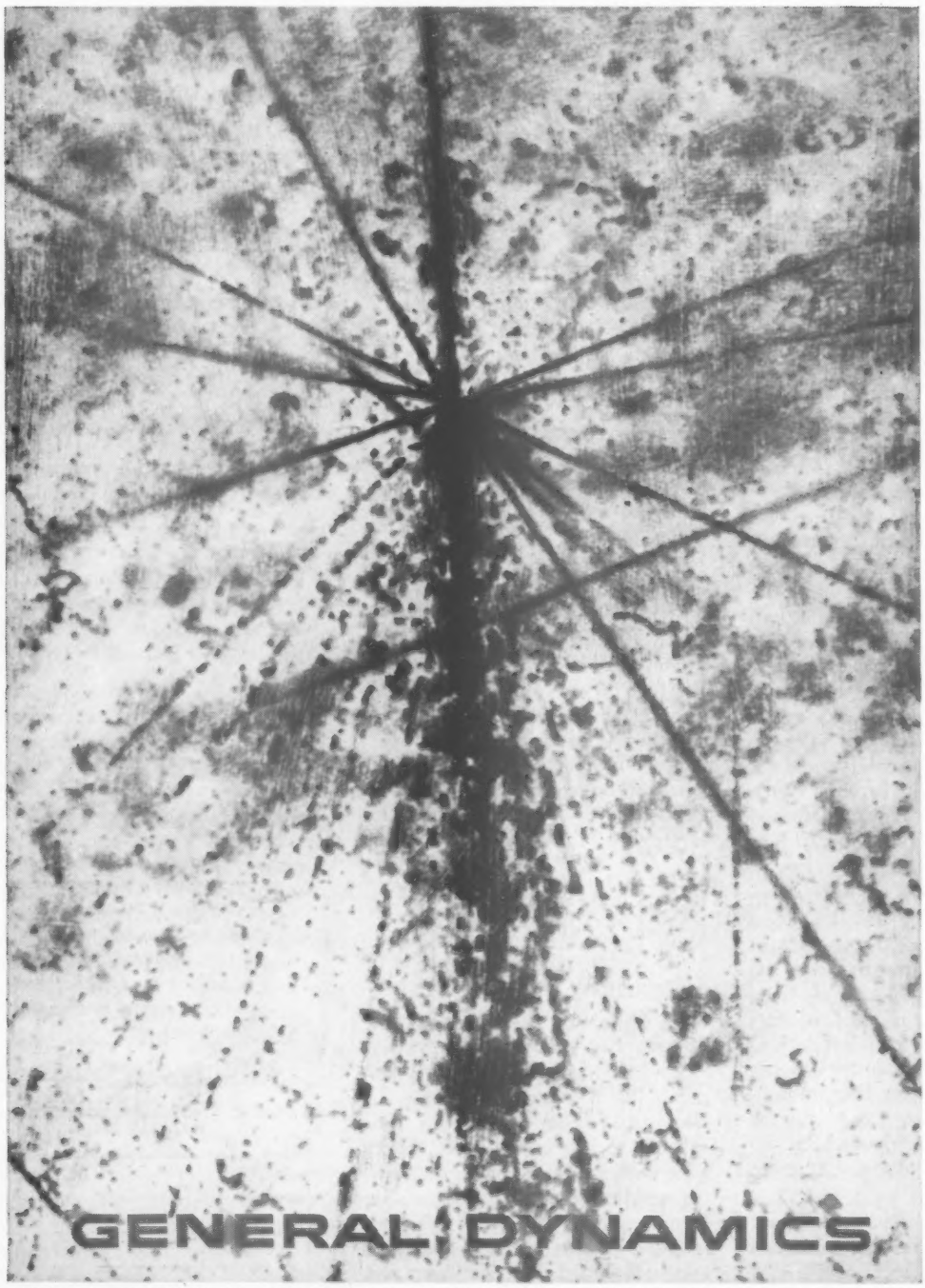
Exploring the Universe: Sub-Atomic Worlds. . . . To Greeks, the atom was literally "a-tomos," not to be cut. Now its very nucleus is split and scientists are tracking *sub-atomic* particles, seeking to discover the nature—order and meaning—of a vast, dynamic universe in which domestic notions of space and time and energy do not apply. *Ethical corollary:* The "finds" of nuclear exploration must be employed *not* in the service of a scientific, or economic, or political provincialism but *wherever* they are needful to the physical, mental and moral rehabilitation of men and of societies.



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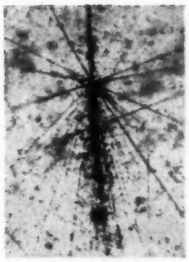

"Within the next century, all the world will be poor in energy ...except for atomic energy."

Can we say then—since there is a positive correlation between energy consumption and national income, and between national income and individual living standards—that many of today's children may see, and suffer from a world-wide poverty?

The industrial West—metallurgy, combustion engines, chemistry, steam, electricity, electronics—was built and is maintained by *power* derived from fossil fuels. It is a "coal and oil" civilization and it, alone, in the next century could consume all the free world's coal and oil resources.

Now, however, the once-agrarian East and Latin America—two-thirds of the world's population—also are determined to have the benefits of industrialization: *power* to conquer poverty and disease; *power* to create and maintain an economic self-sufficiency; and, out of that, *power* to create and maintain political freedom.

The practical developments of the Industrial Revolution that have so profoundly changed the world economy since 1856 — the Bessemer converter, aniline dyes, oil-cracking, the internal combustion engine, the electric motor, electric light, electric power, synthetics, electric and electronic communication, automation and computation, the submarine, winged and wingless aircraft and the space rocket—were the direct result of preceding theoretical explorations by Galileo, Bacon, Newton, Gauss, Laplace, Faraday and those others who could visualize new worlds.

the view from 100 years

The Atomic Revolution now overthrowing present conceptions of power, transport, communication, medicine, agriculture and biology—and hence colonial and collectivist politics—stems directly from the pure and applied scientific research of Curie, Rutherford, Planck, Einstein, Bohr, Fermi, and hundreds of others.

It is evident, then, that *exploration of the universe* is now requisite to our survival as men and nations.

Thus, prospecting for new energy sources — whether in sub-atomic worlds, in the atom, in the earth, in the sea, in the sun, or in the dynamics of stars—is an enterprise for new *scientist-manager-engineer-share owner* groups. Corporate "systems" with the research and development capabilities, the production facilities, the financial capacity and the courage to fit out scientific expeditions to new and far places — and to capitalize on their discoveries.

General Dynamics today is the product not only of its own particular history but of the scientific and industrial history of the Western world. As such, Dynamics declares its corporate purpose to be:

The comprehensive exploration and translation of the basic forces of nature into useful work under the sea, on the sea, on land, in the air, and in space beyond the earth's atmosphere.

Ideas in Operation

A monthly review of some of the better ideas adopted by installations in the Armed Forces. Can these ideas save for you?

Case One

Reported By:

Quartermaster, United States Army, Alaska.

Improvement:

Supply of non-perishable, non-specification subsistence to Army and Air Force Commissaries direct from CONUS supply source.

Date Installed:

February, 1955, on a test basis. Approved by Department of Army on 22 August 1956.

Command Program Affected:

Supply Distribution and Maintenance.

Field for Emphasis:

N/A.

Background:

The Alaska General Depot received requisitions from all Army and Air Force Commissaries in this theater and prepared a consolidated requisition for submission to the Overseas Supply Agency. Subsistence supplies were then shipped from the CONUS Port of Supply to the Alaska General Depot for Storage and final distribution.

Before Improvement:

Non-perishable non-specification subsistence required by the Alaskan Command was shipped directly from the Market Center to the Alaska General Depot for Storage and eventual redistribution to Army and Air Force Installations. This procedure required receiving, unloading, storage, accounting and inventory of approximately 2,000 ton of subsistence monthly by the Alaska General Depot. Resupply of Installation Commissaries required the rehandling, documentation and reshipment of the same supplies. This interim storage thus served as a bottle-neck, disrupting continuous flow of subsistence from the supplier to the user, resulting in the uneconomical utilization of personnel and heated permanent type storage space.

After Improvement:

The Alaska General Depot was eliminated as a storage and resupply point for theater non-specification subsistence and shipments are now being made from the Quartermaster Market Center directly to all Army and Air Force Commissaries in this theater.

Gains:

1. 40,000 square feet Heated Permanent Storage was released for storage of other Quartermaster supplies.
2. The reduced handling of subsistence eliminated the requirement for overseas pack by substituting domestic pack, thereby saving approximately $80,000 per year.
3. Estimated savings in personnel required to receive, store account and rehandle this subsistence at the Alaska General Depot is estimated at $65,978 per year, representing 24 man years.
4. Release of $1,000,000 in stock funds formerly required as subsistence stocks on hand at the Alaska General Depot to support the former supply system.

Management Techniques Used:

Flow charts and methods study. Employee Suggestion, submitted through Incentive Awards Channels.

This new section in ARMED FORCES MANAGEMENT is intended to bring you each month case histories of importance which may be applicable to your operation. Have you the history on file of an idea which could assist others? If so, send it in the form shown on this page to ARMED FORCES MANAGEMENT.

Case Two

Reported By:

Headquarters 6604th Air Base Wing, United States Air Force, APO 862, New York.

Improvement:

Increased safety, ease of operation and decreased cost in using scaffolds by the 6604th Installations Squadron.

Date Installed:

Fourth Quarter FY 1956.

Field of Emphasis:

Improvement objectives for scaffolds used in high ceiling buildings and hangars.

Background:

Two types of scaffolds were in use at this installation. One was a wooden structure which had to be taken apart and rebuilt in order to move it from one side of the hangars to the other. A beam supporting the roof precluded it being moved without disassembling the top stage. The other type was of metal construction in six-foot sections which had to be assembled from the ground level. This too, had to be broken down and reassembled when moved. The small base area of the metal structure made it unsafe when extended to full height.

After Improvement:

A portable scaffold of welded 2″ diameter pipe with a folding top section and mounted on a dolly was constructed. This scaffold with a 12′ x 12′ base area provided a stable platform at full height, and with a top area which could be folded to pass under beams, completed the structure.

Benefits:

Tangible benefits realized amounted to $580.00 per annum. The increased safety, improved working conditions and the elimination of a tedious task, are all credited to this suggestion.

Case Three

Reported By:

US Army, Europe (Nabbollenbach QM Depot).

Improvement:

Conversion of waste cotton cloth into wiping rags. (Project No. QMN 33-56).

Date Installed:

1 May 1956.

Program Affected:

Supply Distribution and Maintenance Program.

Background:

Waste cotton cloth generated by the Mattress and Pillow Renovation Plant is stored until sufficient quantity is accumulated and shipped to Salvage for Disposal.

Before Improvement:

Waste cotton cloth generated by the Mattress and Pillow Renovation Plant was stored at the plant until a truckload had accumulated. The load of dirty waste cloth was then shipped by truck (7 miles) utilizing depot maintenance equipment and personnel to the Area Command Salvage Yard for disposal.

After Improvement:

The waste cotton cloth is sent to the QM Laundry, washed, returned to the Maintenance Division, baled and then shipped to depot stock at a reclamation cost of $4.30 per 100 lb. bale. The catalog price of a bale is $18.00 per 100 lb. bale.

Gains:

During the period 1 through 31 May 1956, 136 bales were shipped to depot stock at a saving of $1,836.20. The estimated annual savings will amount to $22,358.40.

Management Techniques Used:

Methods Study.

Navy Retires New Jersey To Mothballs

Washington (AFPS)—The 45,000-ton New Jersey, one of the last three battleships operating with the fleet, will join 12 others in "mothballs" early next year.

The Navy has announced that the WWII veteran of Pacific fighting will sail soon from Norfolk, Va., to the New York Naval Shipyard for a five-month process of putting the ship in shape to join the reserve fleet at Bayonne, N. J.

No equipment will be removed from the New Jersey. Her guns and machinery will be repaired and "cocooned" to prevent weather damage.

The process is similar to a major shipyard overhaul and will put the battleship in condition to return to sea quickly, if needed, the Navy said.

"The Day The Draft Came Back Approved"

By G. J. Cizek
Capt., USMC

REMEMBER the day the cake of Ivory sank at Procter & Gamble? Today the draft came back . . . APPROVED!

Imagine, if you will, the consternation caused by this most cataclysmic event. Our originator was torn betwixt tears of bewilderment and joy. Six hundred years ago the cry would have been "Odds Bodkins"; today, the calmer associates of our originator could only gaze in awe and mumble, "Well, I'll be damned!"

Being men of science, i.e., systematized knowledge, let us seek to find the cause, or causes that produced the effect described in the preceding paragraph.

Writing, to a person even somewhat interested in his work, represents a form of one's creative urge. To continually hack, chop, and butcher context *needlessly* is to destroy that urge, individual expression of thought, and initiative. Few, if any of us intend to be such Tamerlanes of the work of our fellows.

Let us forget the feelings of our originator for the moment. Deep though we may wound his pride, deeper and more grievously have we wounded his effectiveness by needlessly maiming his work. Our originator is not a dope, if he were we never would have hired him. Thus, because he belongs to a higher strata, he will resist Tamerlane's maiming, generally, by conforming. He will mold his thoughts, and style; yea his very intellect (from 8 to 4:30 daily) to conform, rather than be subjected to further pain and humility. Consequently, our originator becomes little more than a protoplasmic mass.

Why then did the draft come back approved? One of two things happened. It could have been that our originator reached the quintessence of conformation, i.e., the draft fitted exactly into the innermost recesses of Tamerlane's cranium. Was that it? Maybe . . . but, well let's give Tamerlane the benefit of the doubt. On this particular day Tamerlane was busy, what with deadlines, crash projects and depressed panic buttons. He reviewed the creation of our originator, colored pencil in hand, poised, ready to strike, but some unforeseen power stayed his hand. He didn't really like it, he wouldn't say it exactly that way, but, oh, nuts! Deadlines, crash projects, depressed panic buttons, he'd let it go, IT DID SERVE THE PURPOSE. And so, lost in his crises Tamerlane remained oblivious to the fact that he had found the key to executive review of a staff prepared draft.

DOES IT ADEQUATELY SERVE THE PURPOSE? IS IT CONCISE AND CORRECT? Of what matter is it that Tamerlane prefers the verb "retain" to "hold", or the noun "jurisprudence" to "law," or perhaps "quintessence" to "highest"? In each case one serves the purpose as adequately as the other. Steady that red pencil!

When is the last time you received, or returned a draft approved, that bore some semblance to the original?

Tamerlane, you're the keystone in the organization. Effective and efficient paperwork largely depends on you. Don't try to mold your staff to your image. If what they produce for you is grammatically and technically correct, approve it! Don't lose yourself in semantics. Lastly, remember this, you could probably write as well as your staff if some other Tamerlane hadn't molded you in your formative years.

Go ahead and approve that draft! At first it will be as hard for you to stay that red pencil as it is for a smoker to put away cigarettes. In time, however, you'll become increasingly aware of the fact that your staff can and will produce good work. Give 'em a chance Tamerlane!

● **Author's note: Tamerlane (circa 1336-1405) a particularly cruel and rapacious Mongol conqueror. As used herein, "the big boss", or any person who reviews and edits the original work of another.**

Washington Management

Department of the Army. The Department of the Army has recommended to the Secretary of Defense and the President that they approve the reorganization of its divisions to begin in the next calendar year.

According to the Army plan, the changes in the Armored Divisions will be minor, the Infantry Division will be reduced in strength by approximately 3,700 men, and the Airborne Division by about 5,600.

These divisions will be "Pentomic" in character—that is, pentagonal in structure and geared to the anticipated requirements of combat in which atomic weapons may be used.

The numerical reduction in the division strength does not result from an overall reduction in the requirements for military manpower but reflects a redistribution of strength throughout the combat zone.

It is felt that this new division structure will raise the combat effectiveness of the Army be exploiting to a maximum modern technology for the improvement of firepower, mobility and control.

The transition to the new organization will be phased over a considerable period according to plans which are being developed.

Department of the Air Force. Deputy Secretary of Defense Reuben B. Robertson, Jr. recently announced a new single manager assignment under which the Secretary of the Air Force is designated Single Manager for airlift service and will establish the Military Air Transport Service as the principal airlift agency for all of the military departments.

This action is designed to strengthen the mobilization readiness of the Department of Defense in terms of airlift, and to assure greater effectiveness, efficiency and economy in airlift operations, with full consideration being given to the airlift service available to the Department of Defense from United States civil air carriers.

Initially, aircraft assigned to the present Military Air Transport Service, together with heavy transport aircraft of the Troop Carrier element of the Tactical Air Command and certain four-engine aircraft of the Navy's Fleet Logistic Air Wings will be transferred to the new airlift agency. Additional transport aircraft are expected to be transferred to the agency after it has become operational with the initial aircraft assignments.

Department of the Navy. Secretary of the Navy, Charles S. Thomas, recently presented to Mr. John H. Dillon the Navy's Distinguished Civilian Service Award in recognition of his great value to the Department and the masterful manner in which he has served as senior civilian career executive. Mr. Dillon commenced his 27 year career with Navy as a private in the uniform of the United States Marines and advanced to comissioned officer status. In 1941 he began his civil service as Confidential Assistant to the Secretary of the Navy, Frank Knox. During World War II, he returned to uniform, serving as Marine Corps Aide and Confidential Assistant to Secretaries of the Navy, Frank Knox and James Forrestal. After the war, he returned to civilian service, continuing to serve in the Executive Offices of the Secretary. In 1947, Mr. Dillon was appointed to the position he now holds as Administrative Assistant to the Secretary of the Navy.

Department of Defense. Permission has been received from Brazil to place a guided missile tracking station on the Brazilian-controlled island of Fernando de Noronha in the South Atlantic. The station is expected to be operational during 1957 and is considered essential to the U. S. intercontinental missile development program.

Department of the Air Force. Announcement has recently been made to move the Air-Ground Operations School from Southern Pines, N. C., to Keesler Air Force Base, Mississippi in early spring 1957. The school, assigned to the Tactical Air Command, has been located at Southern Pines in a leased hotel building since June of 1951. More than 20,000 military personnel have graduated from the school since its inception. Brig. Gen. Daniel W. Jenkins, USAF, is presently assigned as the commandant.

Department of the Army. (AFPS) Construction has been started on a fast, 338-foot, sea-going beach lighter for the Army Transportation Corps' harborcraft fleet. According to the Army, the $2.4 million vessel, capable of carrying 1,000 tons of cargo or 600 tons of vehicles in ship to shore operations, will have a speed of 12 knots loaded and a cruising range of 4,800 miles. Longer than the WWII LST by 10 feet, the 1,549-ton lighter with 65-foot beam will be able to make ocean crossings to deliver supplies in a combat area. Powered by two 1,200 horsepower diesel engines, the welded-steel ship has a hydraulically operated bow ramp and a hydraulic retracting ram to assist in backing into deep water from shore.

Department of the Air Force. Strategic Air Command and Air Defense Command have jointly taken over responsibility for the Northeast Air Command. No Major changes in the deployment of Armed Forces personnel are involved. The change is a part of the Defense effort to simplify and strengthen the defense structure by orderly and economical realignment of assigned defense tasks.

Department of Defense. The entire Department misses Carter L. Burgess, whose resignation as Assistant Secretary of Defense to become President of TWA brought to a close another chapter in his distinguished career. As Assistant Secretary of Defense for Manpower, Personnel and Reserve, Mr. Burgess leaves behind a record of accomplishments of benefit to the entire Defense establishment.

United States Marine Corps

(AFPS). Marine Corps Commandant General Randolph McC. Pate has established an Aviation Efficiency Trophy to be awarded annually to aircraft squadrons. To be conducted on a fiscal year basis dating back to last July, eligible squadrons will compete in fleet air gunnery and wing gunnery-bombing meets, evaluation exercises, operational and administrative material inspections and aviation safety. Only Marine fighter, all-weather fighter, attack and composite reconnaissance squadrons will be considered for the award initially. Other squadrons will be included later when comparable exercises are developed for them.

Department of the Navy (MSTS). A new tanker has gone into service amidst a worldwide fuel shortage which has made tankers the glamour queens of the seaways. She is the United States Naval Ship MAUMEE, the latest ship to be stack-marked with the blue and gold bands of the Military Sea Transportation Service. The MAUMEE is the first ship in MSTS long-range ship-construction program. The T-5 tanker after acceptance by Vice Admiral John M. Will, USN, Commander, MSTS, soon pointed her bow toward the Caribbean to take aboard her first load of urgently required fuel.

Department of the Army. The Army Employee Suggestion Program is expected to save an estimated $3,000,000 as a result of suggestions submitted by military and civilian personnel during the first three months of Fiscal Year 1957, the Department of the Army announced last month.

A total of 16,989 proposals were received from Army employees throughout the world under a program which urges all civilian, officer and enlisted members of the Army to submit ideas for the promotion of efficiency and economy.

Of this number, 4,579 suggestions were adopted for an estimated first-year savings to the Army of $3,054,244.

In return, 3,700 Army civilian employees received a total of $102,331 for their ideas, all of which were screened by committees at various installations.

During the same period, 879 military personnel submitted adoptable suggestions. Some officers and enlisted men may receive letters of commendation and, in certain cases, be awarded the Army Commendation Ribbon with Metal Pendant.

Department of the Air Force. The Department of the Air Force announced recently plans to increase its troop carrier and air defense capabilities within the Air Reserve Forces.

The announcement state that, in keeping with its plan to have the Air Reserve Forces constantly organized in a manner that will meet mobilization requirements, two Air Force Reserve Tactical Bomber Wings and three Air Force Reserve Fighter Bomber Wings will be redesignated Troop Carrier Wings by October 1, 1957. Two Air National Guard Tactical Bomber Wings will be redesignated Fighter-Interceptor Wings by July 1, 1957.

United States Coast Guard. The annual examination for appointment to cadetship will be held this month on the 25th and 26th in more than 100 cities in the United States and abroad. All appointments are made on the basis of competitive tests and evaluated general adaptability. There are no Congressional appointments or geographical quotas. Complete details are obtainable by writing to the Commandant (PTF-2) United States Coast Guard, Washington 25, D. C.

Department of the Army (AFPS). —New processes of "weeding out" and retraining will ease some of the Army's enlisted personnel problems in 1957, according to the Department of the Army.

"The problems are not new and we don't want to give the idea that these new procedures will be a cure-all," Lt. Gen. Walter L. Weible, deputy chief of staff for personnel, said.

"What we are trying to do is speed up promotions; reduce overages in certain MOSs and retrain surplus people to build up in other MOSs where we are short; and, most important from the long range aspect, insure that we keep only well-qualified people and give them an opportunity to move ahead," he explained.

"The Enlisted Symposium conducted at Ft. Belvoir (Va.) early last fall emphasized the need for a program that would accomplish these objectives," he continued.

The plan includes the use of Minimum Army Aptitude Area test scores and a physical examination to determine eligibility for reenlistment; to employ MOS Proficiency Tests to evaluate qualification for grade and MOS, the results of which will be employed in making promotions, reductions, reclassifications or possible eliminations; and, as far as possible, to upgrade certain positions which carry responsibility or require greater training.

General Weible explained that individuals who are qualified for their jobs and who have given good service to the Army have no reason to be concerned about their eligibility for retention under the new criteria.

"In actuality," he said, "these qualified people will have a better

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chance for advancement as we stop 'carrying' the unqualified. We will have to use sound judgment in administering the new procedures. We will apply the standards to fit individual cases depending upon their merit.

Department of Defense. Guide lines for the establishment of an over-all Department of Defense depot maintenance production mobilization program were recently announced by the Assistant Secretary of Defense (Engineering) Frank D. Newbury and Deputy Assistant Secretary of Defense (Supply and Logistics) Robert C. Lanphier, Jr.

Policies and guidance for planning by the Military Departments with industrial management for commercial and industrial maintenance production capacity that will be needed in event of mobilization are set forth in Department of Defense Instruction 3232.6 issued recently.

The progressive acquisition and utilization of highly complex materiel requiring increasing maintenance support has indicated to the Department of Defense that the peacetime construction of depot maintenance capacity which would be capable of coping with the magnitude of wartime maintenance requirements is both impracticable and uneconomical.

The Instruction incorporates into the Production Allocation Program planning for utilization of commercial and industrial maintenance production capacities and facilities. Heretofore the Program covered only mobilization planning for new materiel production facilities allocations.

Department of the Air Force. (AFPS). In a move designed to bolster mobilization readiness, three wings of heavy transport planes from the Air Force's Tactical Air Command will be assigned to the Military Air Transport Service.

The Department of Defense has announced that 108 C-124 troop and cargo planes of the Troop Carrier Command will be added to MATS in an expansion of the joint military airlift service.

Some planes of the Navy's Fleet Logistical Air Wings also will be transferred to MATS. Additional troop carrier wings and other Navy and Air Force craft will come under the revamped airlift organization later, the DOD said.

At the same time, Deputy Secretary of Defense Reuben B. Robertson Jr. announced that Secretary of the Air Force Donald A. Quarles becomes the "single manager" of air transportation for all military departments under the plan.

The new MATS will have 717 planes. For the present, TAC will retain six troop carrier wings for overseas airlift and both the Navy and Air Force will operate some other transports, including those of the Strategic Air Command.

MATS, however, is expected eventually to operate more than half of the Armed Forces' 4,000 transports in the Defense Department's move for "greater effectiveness, efficiency and economy."

Department of the Navy. An expanded program for the study of the distribution of natural and man-made radioactivity in the air was announced last month by the Navy.

This program is being conducted by the Naval Research Laboratory in cooperation with the Atomic Energy Commission, the Weather Bureau, and the meteorological services of Ecuador, Peru and Chile. A network of 10-12 monitoring stations is planned for the 80th meridian West, extending from Greenland to Antarctica. Seven of these stations are already in operation. This network will supplement a series of stations which have been operated by the Naval Research Laboratory in Washington, D. C. and at various naval activities since December, 1949.

Department of the Army. Establishment of a new Office of Logistics Inspector General, in the Office of the Deputy Chief of Staff for Logistics, has recently been activated. The responsibilities for detailed inspections of contract administration, have been transferred from the Inspector General to the Logistics Inspector General. The major responsibilities of the new office are broadly classified under four general categories: (1) Annual general and special inspections of the headquarters of each of the seven Technical Services, (2) Procurement inspections which involve supervision of the operations of field offices, (3) Investigations and surveys or special inquiries, and (4) Processing and resolving complaints of individuals.

Department of the Air Force. The first group of the new Lockheed F-104 Starfighters have been assigned to operational units. Designed to perform a variety of missions—from stratosphere interception to ground support strafing—the razor-winged fighters have been assigned to the Tactical Air Command. In addition to the single-seat F-104A, a two-seat fighter designated F-104B is in quanity production at Lockheed's California Division plants.

Department of the Navy. The Navy announced recently that the nine men who developed the first guided missile ever launched in wartime against an enemy are receiving official recognition for their

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efforts—13 years after their early missiles were fired in the Pacific.

Tight security considerations at the time, and a later overshadowing of their accomplishments by the rapid development of guided weapons, prevented the nine Naval officers who pioneered the project from receiving public recognition earlier.

In the spring of 1943, these men started work on a small wooden pilotless aircraft with a television camera and transmitter mounted in the nose. The plane or missile was about 30 feet in length or about the same size as a carrier-based torpedo plane of that day. It was powered by two 220-horsepower Lycoming engines and carried a 2,000-pound bomb. Guided by a "mother" aircraft circling out of range of antiaircraft fire, the missile was brought on target by an operator in the "mother" plane who watched its progress on a TV receiver.

Late in 1943 and in 1944 the flying missiles were placed in combat against Japanese land bases. The missiles had a top speed of 140 knots with a range of about 450 miles. Although they were used only to a limited extent, they operated very successfully.

Department of the Air Force. Wash. AFPS). Most of the 80,000-acre Camp Cooke military reservation near Lompoc, Calif., will be taken over by the Air Force early next year as a training base for missile units.

The Air Force has announced that the base will be under the command of Maj. Gen. B. A. Schriever, head of the Air Research and Development Command's western division, which directs the Air Force's intercontinental and intermediate range ballistic missile projects from Los Angeles.

A major portion of the sprawling reservation, situated on the coast about 75 miles northwest of Santa Barbara, will be transferred from Army to Air Force jurisdiction. The WWII and Korean troop training center has been on "caretaker" status for the past several years.

The Air Force said Cooke will require extensive rehabilitation.

ARMED FORCES MANAGEMENT ASSOCIATION
NEWS and ACTIVITIES

Detroit Chapter. Seven discussion groups are underway in Chapter 15. (1) Management Engineering (2) Accounting Systems (3) Administrative Services & Office Methods (4) Executive Development (5) Personnel Utilization (6) Programming (7) Statistical Review & Analysis. We know you will want to be a member of this enterprising Chapter, and for information in regard to membership the following OTAC members will be glad to assist you: Fred Hawkins or John L. Sullivan, Management Engineering, Alice Pianta, Industrial Division, or Earl Shannan, Review & Analysis Branch.

Far East Chapter. Colonel H. H. Cloud, Jr., USAF, of the Civil Affairs staff of UNC/FEC Headquarters, has been elected President of the newly formed Far East Chapter of the Armed Forces Management Association. Program Director of the new Chapter is Major R. P. Strange ,and Mr. W. M. Lockwood is Executive Secretary and Membership Chairman. The Executive Committee consists of Colonel Cloud, Mr. Lockwood, Major H. W. Willard, Captain Norman Gardiner, Mr. Peter J. Lord, Mr. Jack C. Primm, Mr. B. Yott, Mr. Theodore A. Christophil, and Commander G. E. Minor. During the January 16th meeting at the Joint Services Officers' Open Mess at Pershing Heights, the new constitution was discussed and adopted.

Left to right: Lockewood, Cloud, Strange

New York Chapter. Colonel Herbert C. Melleney, USAF, Management Section, First Air Force, and ex-Chapter (Alaska) President of A.F.M.A. lead last month's session with a talk on "Brainstorming Desk Operation Improvement." The meeting was held at the Seventh Regiment Armory, 643 Park Avenue, and was preceded by cocktails and dinner. One of the largest participating groups was in attendance.

Fort Benning Chapter. A prime objective of management is the provision of job satisfaction to each worker, James A. Lawrence, manager of the Columbus (Ga.) Office of the Georgia State Employment Service said at Fort Benning's meeting last month. Speaking on the "Role of Management in Employment Security," at a dinner meeting of the Armed Forces Management Association in the Main Officers' Mess, Lawrence pointed out that job satisfaction is compounded for a sense of belonging, security, recognition and opportunity. He was introduced by Dr. Harold S. Tate of Clemson, S. C., president of the group and Infantry School educational advisor. Maj. Gen. Herbert B. Powell, awarded a Certificate of Achievement, and Brig. Gen. F. R. Zierath, USA, presented a scroll to Colonel Harrison M. Markley, who has led the Chapter through a successful year, and has been transferred to Washington, D. C.

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● In its weapons systems for the future the Army is seeking increased range, great accuracy, and light weight to provide a high degree of battlefield mobility and the best attainable degree of air-transportability. Where practicable, the weapons should be capable of delivering either atomic or conventional warheads.

When You Say Logistics Do You Mean What You Say?

By Bruce Skaggs and James D. Walsh

Polonius: What do you read, my Lord?
Hamlet: Words, words, words.
—Hamlet. Act II, Sc. 2

IS ANY materiel specialist a Logistician? Does the term "materiel" include only military-type supplies? Is there a difference between military supplies and military equipment? Are logistic principles and policies formulated from logistic concepts, doctrines and philosophies, or is it the other way around?

These and many other vexing questions must be faced and answered in any study of logistics if the study is to be a complete one. To start, the terms involved must be defined, beginning with the word "logistics" itself. Also, these definitions must be made consistent with one another.

The Logistics Education and Research Project of the Air Force Institute of Technology was initiated in the summer of 1955 to provide (1) an Advanced Logistics Course, furnishing a six- to nine-months intensive study of logistics on a post-master's degree level for 24 students, and (2) a continuing research effort in the field of logistics to support the educational program, analyze basic logistics doctrine and concepts and, through research, derive procedures, techniques and methodologies for solving logistics problems.

As a prerequisite to development of logistics concepts and doctrine, the research staff of the Project has evolved from various sources a set of tentative working definitions covering a number of the commonly used terms in the field of logistics. The *United States Air Force Dictionary, the Dictionary of United States Military Terms for Joint Usage,* and *Webster's New International Dictionary* (unabridged) were usesd as source documents. From the various senses given in these sources, a single working definition of each word for use in the study of logistics has been evolved.

These working definitions do not represent the only ways the terms may be used correctly in the field of logistics. However, they do provide a suggested standard usage which, if accepted, will simplify communication of ideas, since a given term then will have a single standard meaning unless otherwise indicated by context. Use of such standard meanings will greatly facilitate the concise wording of logistics concepts, principles, doctrine and philosophy.

In developing these standard working definitions, an attempt was made to insure that each definition is compatible with those of other terms whose meanings are closely related. Some existing definitions appear to have been developed as isolated terms and do not correlate readily with other terms which are closely related to them in the field of logistics.

Other objectives in the formation of standard definitions were simplicity of wording and adherence to common usage to the maximum extent consistent with the need for particular military connotations in certain cases.

To help clarify these new definitions, the relationships of various words to each other within certain general areas have been expressed in diagram form. This enables the reader to gain a clearer understanding of the limitations of each term.

Eleven of the definitions thus evolved are shown below.

CONCEPT. An idea or mental image that includes the essential attributes of an action or thing and also all that is characteristically associated with it.

A *concept* concerns the nature (makeup and description) of a thing or the overall way of accomplishing an action; a *principle* concerns a fundamental truth or assumption as to the inherent relationships between actions and/or things.

DOCTRINE. The body of concepts and principles in any branch of knowledge or endeavor.

***Principles* and *concepts* are conceived; when taught, that which is taught becomes *doctrine*.**

LOGISTICS. The art and science of building and supporting a military force by provision of resources as required by the tactical and strategic considerations involved.

The *resources* provided are materiel, personnel, facilities and services. The *functions* involved in providing these resources are determination, acquisition and distribution. The *managerial areas* involved are policy, planning, programming and methodology.

MATERIEL. Any or all items authorized for the equipment, maintenance, operation and support of military activity.

PHENOMENON. Any observable fact, object, relationship or event; normally attributed to the operation of some natural law and actually or theoretically subject to analysis and explanation.

PHILOSOPHY. A system of attitudes, beliefs, concepts and principles held by a person, group or organization with reference to a given subject; usually reflected in conduct.

POLICY. A settled or definite course or method for approaching a problem, for doing a thing, or for deciding what things to do and in what order, each dictated by philosophy, doctrine and/or expediency.

PRINCIPLE. A fundamental and general truth; a statement of fact or belief which constitutes a fundamental assumption on which other principles or policies and courses of action may be based. (See *concept*).

STRATEGY (military). The art and science of employing the armed forces of a nation to secure the objectives of national policy by the application of force or the threat of force.

SUPPLY. The provision of materiel for a military establishment; distinguished from *logistics* in that the latter is concerned with the provision of personnel, facilities and services as well as materiel.

***Supplies*: n, plural. Is synonymous with materiel, i.e., no distinction is made between *supplies* and *equipment* as items of materiel.**

TACTICS (military). The art and science of using military forces in a combat situation to achieve some immediate advantage or to mitigate a disadvantage.

These tentative working definitions currently are being studied and tested by the second class of the Advanced Logistics Course and by many other persons to whom they have been distributed. From the comments and constructive criticisms which are expected, we of the Project hope to develop proven and generally accepted integrated terminology which will be of substantial assistance in future research and teaching. To this end, the comments of readers of *Armed Forces Managemment* are solicited. They should be addressed to the Director, Logistics Education and Research Project, Air Force Institute of Technology, Wright-Patterson AFB, Ohio.

Republic Aviation Conservation Plan Saves it Millions

Republic Aviation Corporation officials expect to achieve savings of more than two million dollars in 1957 in the production of Republic's fighter-bombers as the result of more than 100 conservation measures instituted by 18 of the company's departments.

The measures, constituting part of a program for saving defense dollars by eliminating waste in the use of manpower and materials, range from a new method of separating scrap metal to a newly designed tool that shortens landing gear re-work time.

One of the new procedures, according to Conservation Manager N. W. Andrews, resulted in Republic's winning a first prize in the Annual National Packaging Contest sponsored by the Society of Industrial Packaging and Materials Handling Engineers. This was the substitution of triple-wall corrugated cardboard for wood and canvas "ties" to secure spare parts in shipping containers. It is expected to save an estimated $13,000 a year.

The program is administered by a committee headed by Vice President and General Manager Walter G. Bain and includes key executives from engineering, production and administration departments. Reports are submitted quarterly by the various departments and shops on conservation methods that have been instituted. These are examined and analyzed by the committee and summaries are published of those methods that it feels can be used profitably by other departments in cutting costs.

How are some of the conservation measures instituted in the past year:

A new method of making non-design blueprint changes, resulting in savings estimated at $120,000 a year.

Electro-magnetic separation of mixed lots of stainless steel and monel rivets saving $8,900 a year.

A new method of preserving fuel cells on Air Force planes being modified at Republic that will save an estimated $63,000.

A new tool developed by Final Assembly to facilitate landing gear re-work which will save $3,750.

"These are just some of the more outstanding ideas that have resulted in savings," Andrews said, "but what has made the program truly successful are the basic conservation practices observed in the handling of materials and tools in everyday work that, while small, add up to large savings."

Republic is currently producing the F-84F Thunderstreak, atom-bomb-carrying jet fighter-bomber, and the supersonic F-105 fighter-bomber.

U.S. to Celebrate 350th Anniversary

Washington (AFPS)—The U. S. will celebrate the 350th anniversary of its first English settlement in 1957 with the nation's most ambitious observance of Colonial history in a year-long festival at Jamestown, Va.

Authorized by President Eisenhower, Congress and the General Assembly of Virginia, the festival will be centered around historic Jamestown, where the first settlement was established in 1607; Williamsburg, where Colonial statesmanship flourished; and Yorktown, the scene of our fledgling nation's victorious Revolutionary battle which brought the surrender of Britain's Lord Cornwallis.

The festival is expected to draw five million American and foreign visitors. The Army, Navy, Air Force and Coast Guard will take part daily in the Jamestown Festival between April 1 and Nov. 30.

Armed Forces participation will be climaxed with 10,000 servicemen reenacting the Battle of Yorktown on Oct. 19.

To perpetuate America's heritage, a $25 million project will restore famous James Fort, as well as innumerable historic buildings and will establish two museums in the 19-mile area between the James and York Rivers as permanent national shrines linked by a new $4.6 million Colonial National Parkway.

Several special events during the celebration are expected to be attended by President Eisenhower, Queen Elizabeth II of Great Britain, Secretary of Defense Charles E. Wilson, the service secretaries, top military and civilian defense officials and hosts of other national and international leaders and statesmen.

The Armed Services also will be represented with exhibits in Jamestown's New World Museum and during the mammoth International Naval Review scheduled for June 7 to 13.

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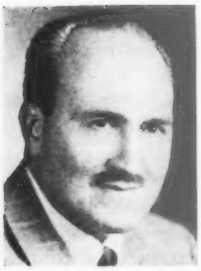

Living quarters of unmarried personnel, officer and enlisted, will receive more attention in new housing legislation. The new military construction program will include a request for funds to build new or repair old quarters. Some bachelor officers have complained that they were contemplating marriage merely to get a better place in which to live.

Some appropriated fund housing will be earmarked for new units for commanding officers of bases and stations and for remote installations not authorized under the Capehart housing program.

Basic quarters allowances would be given to enlisted personnel in grade E-4 with at least four years' service. At present seven years' service is the minimum required for such allowances.

Reserve and National Guard enlisted personnel on active duty for training would be entitled to the same quarters allowances as regular enlisted personnel on extended active duty under the terms of pending housing legislation.

Unfortunately, it takes time to provide the housing necessary to improve Service living. The Army, for instance, has a world-wide shortage of 96,000 dwelling units and through maximum use of Capehart housing and appropriated housing funds would need three years to build 50,000 to 60,000 units.

College Education

Discussing the Regular Officer Augmentation Program, Major General James L. Richardson, Chief, Career Management Division, Department of the Army, said that one factor that will play an important part in determining whether applicants will be given a Regular Army commission is the amount of education they have. "It is felt," he said, "that a minimum of two years' college education is a fundamental requirement for an Army officer to succeed in his profession."

In order to encourage education, the Air Force has "Operation Bootstrap" and "Operation Midnight Oil". "Airman and officers," said Donald A. Quarles, Secretary of the Air Force, "have found it possible to continue their education, and in some cases even receive college degrees, through the excellent instruction available to them either in residence or by correspondence. Even so, about thirty percent of the airmen currently leaving the Air Force do so for the expressed purpose of improving their educational level. Naturally, we would like to make it possible for them to do this while continuing careers in the Air Force."

We have heard more than a few retired officers say, sometimes with bitterness, that they received sufficient in-service education to qualify for certain jobs but did not receive a covering degree.

Pending legislation would authorize the Army Medical Service Graduate School to grant graduate degrees, and places the Army Judge Advocate Generals School on the same basis as other recognized law schools in the matter of granting degrees and credits.

Miscellaneous Bills

Exchange Stores Overseas. To authorize the Services to purchase or lease with appropriated funds property in foreign countries as sites for post exchange stores. More exchange stores abroad are a MUST.

Uniform Rations. The Defense Department insists that rations should be uniform among the Services, primarily for the purpose of providing better food, including more milk and meat. The legislation may specify the same MINIMUM food, in type and quality.

No VA Benefits In Courtmartial Cases? It is planned to amend the Servicemen's Readjustment Act of 1944 to deny Veterans' Administration benefits to persons discharged or dismissed from a Service by courtmartial.

Plan For Retirement

An increasing number of military officers are not only contemplating retirement but are planning for it. The nature of that planning varies, depending largely on the officer's need or desire to work after retirement. But no matter what you do after retirement, you and your family could benefit from Congressional approval of amendments to a number of laws designed to make your postactive duty living easier and more profitable.

Unfortunately, legislation dealing with the military retired often does not get the attention it deserves, and the retired are often ignored in legislation applicable to all Service members.

The great majority of retired Regular officers, except those retired for physical disability, are barred from working for the Federal Government. Yet there are many Federal Government positions these officers might occupy, including some jobs which have been open for years because of the scarcity of engineering and scientific workers. The laws preventing retired Regulars from accepting such employment are the Act of July 31, 1894, the so-called dual employment law, and the Act of July 30, 1932, the so-called dual-compensation law. The dual compensation law was amended by the last Congress to provide that a retired Regular could accept a government job if the total of his retired pay and the pay of the government job would not exceed $10,000 a year.

Efforts will be made to have this 85th Congress repeal both these laws so there would be no restriction on Federal employment of retired officers. But there will be opposition to such efforts; some people want fewer, rather than more, military officers in civilian government positions.

The conflict-of-interest statutes

discriminate against employment of retired Regular and Reserve officers in positions involving selling to agencies of the Federal Government. Efforts will be made to have them amended.

More On Pay

There is always something new on pay, even if only a rumor. By the time you read this, the Cordinar Committee report may have been submitted to Congress. Latest dope (as of early January) is that the committee favors some small general pay increases in order to compensate for increases in the cost-of-living and the slight decrease in take-home pay resulting from the Social Security tax. The committee is said to favor a revision of pay grade schedules which would provide in-grade advancements to replace longevity pay increases.

The big increases in pay would be given to senior officers and to enlisted personnel with skills which are in great demand in civilian life. All officers would receive some pay increases.

Task Force Men Pack Parachutes For Pole Drop

Williams Air Operating Facility, Antarctica (Delayed)—One of the most unusual buildings at the U.S. Navy's Williams Air Operating Facility, McMurdo Sound, Antarctica, is the parachute rigging loft.

Lazily stretching its length beneath the rugged slopes of Arrival Heights, its bright green canvas cover gives the appearance of a giant pre-historic caterpillar creeping into camp from a strange world.

Here, Aircraft Loadmaster Harold E. Willett, T/Sgt, USAF, Tuscaloosa, Alabama and parachute rigger Raymond L. Gority, A/2c, USAF, Altoona, Pennsylvania, have been busy for months packing, assembling and rigging materials for aerial drop at the South Pole. Willett, because of previous experience at Thule, Greenland on Operation Dogsled in 1953 and Operation Ridgerunner in 1954, has been temporarily assigned to Mobile Construction Battalion (Special) from the First Aerial Port Squadron, Donaldson Air Force Base, South Carolina. Gority has had previous experience in Alaska.

Packing, assembling and rigging over 530 tons of material varying from a pencil sharpener weighing six ounces to tractors weighing 17 tons is a big job and a vital one to the success of the establishment of the South Pole base. Various sizes of parachutes will be used. There will be numerous man-sized chutes 24 feet in diameter, 64-foot chutes capable of carrying 2000 pounds, and the huge 100-foot wide chutes, as large as circus tents, and capable of dropping tractors, weasels and power generators.

It takes three men, three hours and 105 folds to properly rig a parachute for aerial drop. One mishap or mistake could cause thousands of dollars of equipment to crash after falling to the ground. The C-124 Globemaster, the largest of Air Force transports, will be used to air drop this material to the Pole. Included in the 500 tons of equipment are five buildings, 1500 barrels of fuel oil, 10 tons of food and provisions, and 50 tons of scientific equipment to be used during the Geophysical Year commencing July, 1957. This material will sustain 18 people for longer than a year.

Hercules to be Tested In Arctic

Wearing the largest aircraft skis ever built, Lockheed's 62-ton C-130 Hercules assault transport will undergo "Arctic" tests in February to qualify it for transporting troops and military supplies to snowfields or icecaps, Lockheed Aircraft Corporation officials reported.

With its 19½-foot main skis and 9½-foot nose ski, the Hercules could be switched from polar duty to sand landings in desert areas where ordinary wheels bog down, engineers reported.

First of the "Ski-130" snowplanes is being outfitted at Lockheed's Georgia Division for tests next month at Bemidji, Minn.

Prototypes of the heavy-duty, 370-m.p.h. air-hauler were built and test-flown at the firm's Burbank factory. It is the U.S. Air Force's first propjet-powered transport, using four Allison 3750 h.p. jet turbine engines instead of piston engines to drive its massive propellers.

Conventional models are already in service with the Tactical Air Command's 18th Air Force.

For landings on ice, the Hercules' 1700-pound main skis were designed with "knee action" to provide the cushioning effect otherwise obtained by low-pressure tires.

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Why Suggestion Awards Pay Off

Creative potential is that unique ability of bringing something new into the world—a new tool, design, book, song, idea or method. It encompasses the capacity for thinking beyond the confines of existing knowledge and experience. It must precede both invention and copyright and is thus the basis for all progress.

★

By Henry G. Mazlen

WITHIN the Federal establishment, with its vast research organizations and particularly within the Department of Defense where a major portion of research is under the cloak of security restrictions, creative potential must not be neglected. In our world there is a constant race for new ideas—and it seems that America must remain ahead of all her idea-competitors for sheer survival. It follows that our government needs men and women with creative potential and that such employees must be encouraged.

In the commercial world, incentive for ideas lies in rewards reaped from marketing of patented or copyright works. Governments have acknowledged that ideas are the secret and private property of the originator; to stay in his or her mind forever, or be made public. To induce those with creative potential to make their ideas public under government protection, the patent and copyright laws were formulated.

There now exists a means for recognition and advancement related to the individual values of each public servant which can be measured against his or her creative potential and demonstrated contributions to progress.

At long last, a new law which recognizes the merit of awards for both ideas as well as performance, has been enacted. This law states, "The head of each department is authorized to pay cash awards to and to incur necessary expenses for the honorary recognition of, civilian officers and employees of the Government who by their suggestions, inventions, superior accomplishments, or other personal efforts contribute to the efficiency, economy, or other improvement of Government operations or who perform special acts or services in the public interest in connection with or related to their official employment."

Some men and women not only rise to meet what their particular jobs demand of them—but motivated by initiative, go beyond the prescribed limits to make valuable contributions to their own organizations specifically, and to the Government in general. A superior accomplishment towards efficiency and economy may not be patentable or copyrightable, but as a mark of individual effort, as an index of creative potential, it calls for deserved recognition and commensurate reward.

Clearly then, it is the duty and responsibility of management at all echelons to see that worthwhile contributions are properly credited to those who bring them forward. Management must recognize that there is no monopoly of ideas **outside** the Federal establishment.

Whoever has powers of observation keen enough to discover a need, self-confidence enough to believe that some method or device not previously tried is worth searching for, dissatisfaction enough with the existing order—and perseverance enough to work out a better way of doing a job—that person deserves to be encouraged and rewarded when the sum total of his or her efforts prove practical.

Creative Potential Lacking

It has been asked why professors of English do not write our best sellers, why professors of chemistry and physics do not solve the mass of practical problems which impinge on these and related fields. We know now why our great songs are not written by concert artistis, why our great symphonies are not composed by first violinists or conductors. The reason is that **creative potential** is lacking.

There is a saying that the "one who makes the model is not the inventor." This is the critical appraisal. Imaginative insight and inventive ability appear to go hand-in-hand and may be found in all walks of life, in all lines of endeavor and at all echelons of organization, from office boy to president.

It is a strange fact that new ideas have always encountered some form of opposition. The danger is that lethargy to change or outright suppression can frustrate those who really have good ideas. "The history of invention is filled with heartbreaks." The patience of the creative personality is too often worn thin in crossing the Desert of Opposition.

Usually, all the good ideas come from the executives; but this is natural. The trick is to get those who are not in executive positions to develop creative potential and contribute to organizational progress.

In the Federal government, the introduction of the suggestion box and the review of ideas by committees has tended to build confidence in the system. With continued encouragement, more and better ideas will evolve. It is surprising what a volume of ideas can be generated by a handful of people under proper stimulation.

Because it is human nature to become discouraged after a few disappointments, it is management's task to see that the suggestor who has submitted ideas which have not been accepted is made to feel that there is still plenty of room for improvement. Stephenson's locomotive, Fulton's steamboat, Edison's genius, and the contributions of Pasteur, the Wright brothers and Einstein—all would have been lost to our civilization but for the in-

defatigable efforts shown by these idea-men.

The greatest inventive contributions have come from men and women who were practically brought up on a diet of rebuke and scorn from friends, parents and strangers alike. They looked ahead. They didn't give up after one or one hundred failures. Finally, they won out.

Thomas Jefferson was belittled for the Louisiana purchase because his contemporaries lacked his vision. Today, unenlightened, irrational, intolerant attitudes toward progressive ideas would be unforgivable. In the short span of some fifty-odd years the ingenuity of man has attained a position which cannot even be measured against man's accomplishments over the past 300,000 years!

It is a fact that a significant part of this advancement was achieved by men and women working under the auspices of our Federal government!

Unfortunately, security restrictions have precluded the free dissemination of these achievements and the identification of these benefactors in many instances.

The truth is that with technological advances, man's investigative faculties are becoming unshackled. There is no law, according to psychiatrists, which governs the production of ideas. Men with four university degrees after their names are in no better idea "climate" than men who never finished high school. The scientist sorting his facts with cold logic is on the same creative plane with the lathe operator who recommends an improvement in machine design which increases production one-hundred fold and reduces costs. The question of worth is relative since the end result is progress; whether it takes the form of a master's thesis or a lathe worker's beneficial suggestion.

Within the Federal establishment with its extra-governmental affiliations, particularly in Defense work, vast fields continue to be opened to innovators and investigators. Science, public health, communications, transportation, agriculture, industry—all have opened doors which confront us like new horizons. And in all these fields together with many, many more, there are Government employees whose creative potential is still to be awakened and stimulated.

Is it any wonder that management has this growing responsibility for finding and encouraging the minds we must have in the future we are all working for? When we remember that the Mayas of Yucatan actually had a calendar that lost but **one day** in 374,000 years, yet the Mayas possessed no instrument of precision to help them evolve it—what should not **our** creative potential be capable of?

We must also consider that often results will not be individual. In this respect, management must develop a standard of ethics in dealing with group accomplishments. By ethics in this special sense I mean doing everything possible to bestow **group recognition** plus individual recognition upon outstanding leader(s) of the group.

Three Traits Shown

If an individual has ever accomplished anything worthwhile he or she has evidenced three admirable traits—organizational skill, experimental ingenuity and patience of a very high order. These criteria may assist management in selecting and training employees for specialized positions. These attributes tie in with the skill necessary for the accumulation of facts, systemization of observations, recording of conclusions. It is a form of atriculateness which may be considered characteristic of innovators and research workers.

There is but one conclusion that you can draw from all this—that we must be prepared to receive ideas from all sources. There must be but one criterion. Does the idea contribute to progress; to efficiency and economy in the operations of the Federal Government, or to other objectives along these lines such as safety? If so, we are obligated to receive such ideas in good faith, decide upon their merits and show the originator that his contribution is worthwhile.

No program of incentives and award can hope for success, regardless of law, if management does not believe in and subscribe to these fundamental truths about innovations and innovators alike. In many areas the search for ideas borders upon desperation. All echelons of management have been alerted by direct messages from the President and the Secretary of Defense. Instructions have been issued. Procedures have been formulated.

The onus lies heavily upon management to get the instructions carried out so that the full intent of the law will be met. The evidence will not be long forthcoming. As managerial leadership goes into full swing behind the awards program, the suggestion boxes will fill; measurable saving and documented efficience in operations and records of unusual individual achievements will accumulate in all Federal organizations.

This testimony will prove beyond any doubt that the program of finding, stimulating, recognizing and rewarding creative potential has far-reaching benefits. And once the program is in high gear it will be management's task to keep it from retrogressing. Nothing remains static. There will always be room for improvement and need for improvers.

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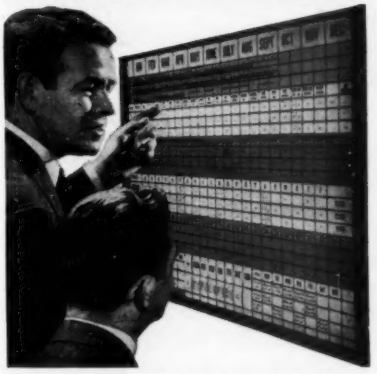

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Management Briefs from the Services

Fort Monmouth, New Jersey. A new photo-sensitive plastic which could be used militarily for printing photographs in areas affected by atomic radiation and be adapted for many unique civilian uses has been developed by the Army Signal Corps Engineering Laboratories. Ordinary photographic papers tend to fog under nuclear radiation. The new plastic is almost unaffected by gamma rays, and pictures are clear, durable, waterproof and stronger than today's paper prints. With the new material, no water is needed and only a limited amount of equipment required. Total developing time is five minutes, and chemicals and darkrooms eliminated.

Smoky Hill Air Force Base, Salina, Kansas. On March 16, 1957 this Strategic Air Command bomber base will be renamed the SCHILLING AIR FORCE BASE, in honor of the late World War II ace, Colonel David C. Schilling. Sixth-ranking ace of the European Theater, Colonel Schilling who was killed last August, hailed Kansas as his home.

Fort George G. Meade, Maryland. The Army Center was host last month to an Air Defense Conference with representatives of the Department of the Army, research agencies, Continental Army Command and Army Antiaircraft Command participating. Subjects discussed included the Army's role in air defense in view of the recent decision by Department of Defense assigning all landbased antiaircraft guided missiles to the Army. Since these new weapons provide a high level of defense requiring new concepts of employment, the Army research and development program to provide weapons of ever-increasing effectiveness were discussed. Among those attending were Lt. Gen. James M. Gavin, Army Chief of Research and Development; Dr. Ragnar Rollefson, Chief Scientist, Department of the Army; Lt. Gen. Stanley R. Mickelson, Commanding General Army Antiaircraft Command; Major General J. B. Murphy, Headquarters, Continental Army Command; Major General R. J. Woods, Commanding General, Antiaircraft and Guided Missiles Center.

U.S. Naval Hospital, Corona, California. Captain A. C. Abernethy, MC, commanding officer, recently hosted 300 doctors from various parts of the United States and Canada in a medical conclave. Guest speaker for the meeting was the scientist and lecturer, Professor Hans Selye, director of the medical and surgical research department at the University of Montreal.

Army War College, Carlisle Barracks, Pennsylvania. 180 principals have been nominated by the Department of the Army to attend the 1957-58 course. Selections were approximately divided between Colonel's and Lieutenant Colonel's scheduled to attend the senior course of instruction.

Headquarters Strategic Air Command, Offutt Air Force Base, Nebraska. The Strategic Air Command in 1956 continued its 24-hour global watch of nearly 11 years by flying more than 1¼ million hours in simulated combat missions over most of the world. During the past 12 months, the nation's long range nuclear strike force completed more than 150,000 refueling hookups. Within a two-week period ending December 11th, more than 1,000 aircraft flew unit simulated combat missions over the North American continent and Arctic regions. Twenty-one B-47 Stratojet Wings and 18 Tanker Squadrons were involved. These missions averaged 8,000 miles and the mass flights successfully demonstrated SAC's ability to launch a mass strike force on short notice.

Chicago Regional Office, Army & Air Force Exchange Service. A higher score in management evaluation retains the Major General Edward H. Wite Management Trophy for the second year in the Chicago Regional Office. The first two-time winner of the coveted award surpassed all of the other four regional offices in the competition. Colonel John Gwinn, Chicago Regional Officer, accepted the trophy at the semiannual conference in Baltimore, Maryland.

Fort Belvoir, Virginia. Major General David H. Tulley, Commanding General of the Engineer Center and Fort Belvoir, upon orders from the Department of the Army, activated the 2d Engineer Amphibious Support Command. At full strength, which is not contemplated at this time, the unit will be commanded by a General Officer and have about 3100 troops. The new command will be equipped with LVT's, and one organic amphibious equipment battalion will have the capability of transporting in one lift over 5000 combat troops. Inactivated in 1955, the 2d Engineer Special Brigade, the original designation, has a long and colorful past.

Norfolk Naval Shipyard, Portsmouth, Virginia. $1,165 was paid shipyard employees last month for 60 method improvement and money-saving ideas. The suggestions represent a first-year savings of $11,064, plus intangible safety, morale and service benefits. Top award of the month went to John E. McCloud for an improved method of bricking melting furnace roofs which will turn in first year savings estimated at $2760.00.

Andersen Air Force Base, APO 334, San Francisco. Four Andersen airmen received $65 last month for beneficial suggestions submitted to the Base. Airman First Class Gilbert D. Sills, 3960th Supply Squadron received the top check for $25 for his idea to install an automatic liquid foam fire extinguisher system at the liquid oxygen plant. Close behind with an identical check was S/Sgt. Joseph P. Pennock for his suggestion on removal of electric hot water heaters.

Army Language School, Presidio

of Monterey, California. The ending of 1956 marked 15 years of operation of the Army Language School. Graduation ceremonies for 315 studednts were highlighted by the establishment of the Maxwell B. Taylor Award for the outstanding student of each class. Colonel Walter E. Kraus, Commandant, presented the first award to M/Sgt. Paul R. Arman, a student of Lithuanian. Lt. Gen. Robert N. Young, commanding general of Sixth Army, was the principal speaker at the occasion.

Alameda Naval Air Station, California. Christmas came early to Jon Susmann of Oakland, California. Jon didn't miss Christmas, however, thanks to three Navy aviators stationed at NAS Alameda. His Christmas which was climaxed two weeks early by his death from lukemia, was a memorial one made possible by Carrier Air Group 9. Jon Susmann was a 16-year-old boy whose life's desire was to be a Navy pilot and aircraft engineer. Hearing of his desire and knowing that Jon's days were numbered, Lt. (jg) John Stevenson, Ens. D. C. Fitzgerald and Ens. Mark Noble, all Navy pilots, visited the youth in this hospital room. After presenting him with a Navy "hard-hat" from the Air Group, Jon joined the trio in stories of the wide blue yonder. One of his last memories was a flyover by the Navy trio for Jon who watched from his darkened hospital room. The staff of ARMED FORCES MANAGEMENT would like to add their thanks to the Navy pilots who on their own time made this story possible.

Air War College, Maxwell Air Force Base, Alabama. The Army has designated 10 officers to attend the 1957-58 course at the college. The following were selected: Colonels Charles F. Heasty, Robert H. Schultz and George I. Forsythe, and Lieutenant Colonels Duane S. Cason, John S. Lekson, Robert M. Hamilton, John C. H. Lee, Jr., Stanley P. Hidalge, Russell E. Whetstone, and R. S. Thurston.

Camp Cooke, California. The major portion of the Camp Cooke Military Reservation, Lompoc, California, has been transferred to Air Force jurisdiction for use as a training base of Air Force missile units. The base will be under the supervision of Major General B. A. Schriever, USAF, Commander of the Air Research and Development Command's Western Development Division in Los Angeles.

Fort Dix, New Jersey. The "power of suggestion" by civilian and military personnel in 1956 has saved the government an estimated $60,000, according to recent statistics released by the Dix incentive awards committee. Cash awards for the adopted ideas, ranging from safety measures to improved methods of work production, submitted to the awards committee, totaled $840. Of 370 ideas submitted, sixty-three were adopted for use at Dix and other posts throughout the country.

Fort McNair, Washington, D. C. 33 officers have been selected to attend the 1957-58 course at the National War College, and 38 officers selected as principals for the Industrial College of the Armed Forces.

Navy Underwater Sound Laboratory, New London, Connecticut. Captain H. E. Ruble, commanding officer and director, has a right to be proud. In December the laboratory marked its greatest safety achievement—the completion of its second consecutive years of operation without a single lost-time injury. In a special "Safety Salute" program, civilian and Navy personnel were honored for 730 accident-free days which total 3,215,256 man-hours.

Camp Pendleton, California. Major General George F. Good Jr., USMC, Base commander, last month presented cash awards to 14 Base civilians. The highest award went to Mr. Louis C. Haff, who received $300 for his modification to a diesel locomotive. Barbara L. Sanders, was second with an award of $275 for an outstanding advertising safety suggestion.

Cruiser-Destroyer Force, Pacific, San Diego, California. Twenty-four officers last month completed Officers' School becoming the eighth class to complete the course. the Force's Destroyer Engineer Rear Admiral Chester C. Wood, commander, Cruiser-Destroyer Force, Pacific, made the graduating address. 187 officers have completed the course since its inception in January 1955.

Second Coast Guard District, St. Louis, Missouri. An "appreciation" plaque for work done in the area was recently presented to the District by the Carondelet Improvement Association of St. Louis. The plaque reads: "Carondelet Community Award" "Presented to the United States Coast Guard Second District, St. Louis, Missouri. In recognition of its valiant and loyal service and constant alertness as an 'always ready' guardian of life and property within the river areas of the metropolitan St. Louis and its traditional accomplishments in other important assignments."

Fort Bragg, North Carolina. The new War Museum at Fort Bragg was officially opened on the 18th of last month in colorful dedication ceremonies. Lt. Gen. James M. Gavin, USA, Chief of Army Re-

(*Continued on page* 44)

HOW TO GET INVESTMENT FACTS

about Mutual Funds

I am interested in investing through the Mutual Fund method and would like to start a personal investment program in one or more Mutual Funds.

Please send me detailed information on a Mutual Fund which (within market risk limits) seeks the objective best defined by: (Check one)

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☐ AGGRESSIVE TYPE—Emphasis on possible growth of capital with current income secondary.

I understand that full information will be sent to me at *no cost or obligation* when I mail this advertisement; and that information is to guide us. Achieving objective is not assured.

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For more facts request No. 21 on reply card

NEW Dollar-Saving Products

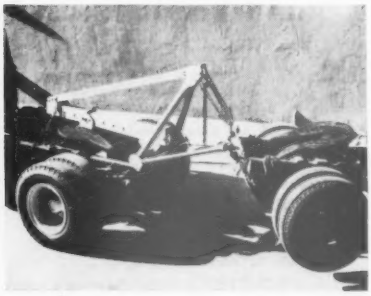
INVESTMENT BROCHURE

Armed Forces Management. Have you given much though to the income cut you will take when you retire? Will your grocery bill, your clothing costs, your gas and oil, your rent all be cut in half just because your income is? Our library has a folder entitled, "You Can Retire on Your Terms," which points out how with even a few years of service remaining, you can substantially supplement your retirement income. It shows how a great deal can be accomplished with a small amount of money. A copy is yours, without obligation, by circling the attached reply card.

For more facts request No. 1 on reply card

TOWMASTER DETACHABLE CRANE

H. S. Watson Company. (See cut). One driver and any standard truck tractor equipped with the Watson TOWMASTER can transfer or bring in disabled or wrecked trucks. The Watson TOWMASTER is a quick detachable crane that anchors to a tractor fifth wheel with one adjustment. No overhead crane is necessary for mounting or dismounting—only a beam; the TOWMASTER has its own built-in self-hoisting mechanism.



The TOWMASTER safely handles the majority of highway towing generally done by expensive heavy-duty towing vehicles. A truck can be towed frontward or backward; it tracks true at all times and is held firmly on severest road curvature or braking conditions. The TOWMASTER gives additional traction and weight on the towing vehicle driving wheels—an important consideration for slippery road conditions.

The TOWMASTER has a 10,000 lb. capacity, plus safety factor. The manually-operated winch has a mechanical advantage of 192:1, so can easily lift the heaviest "West Coast" tractor. The TOWMASTER weighs only 450 lbs., and has little or no maintenance requirements.

For more facts request No. 2 on reply card

MICROPOT POTENTIOMETER

Borg Equipment Division, The George W. Borg Corporation. Production of the new 910 Series Single Turn Micropot Potentiometer has recently been announced by Borg. It is a high precision instrument, linear in function, and offers many advantages including extreme accuracy, fine resolution, low torque, long life and consistent, reliable performance under adverse environmental conditions. The resistance element and terminal leads are moulded into a single unit for better operation under severe vibration and high temperature conditions. Units may be ganged, and each cup may be individually phased in the field. All models have ball-bearing mounted shafts. The manufacturer claims after extensive tests that the new 910 meets or exceeds all commercial and military environmental requirements. A complete brochure giving technical data is available without obligation.

For more facts request No. 3 on reply card

NEW MULTI-PURPOSE MIXER

The Jiffy Mixer Company. (See cut). A new multi-purpose mixer which can be used in almost any material, is claimed by the manufacturer to be able to mix in a minimum time by attachment to any standard make electric drill. Newly patented, the mixer has already proven to be an important time saver in many commercial and military fields. Some of the products handled with ease include aluminum and lead base paints, powders, latex and even sheet rock mud. One of the big advantages claimed for the new mixing device is that it can be used in open containers without any hazard of splashing or cutting into the con-

As a service to OPERATING DEPARTMENTS and PURCHASING OFFICERS, ARMED FORCES MANAGEMENT will provide you with a selected list of manufacturers' products. Claims presented are those of the supplier and not necessarily of this publication

How to Use Armed Forces Management's Library—

Inserted in this issue, a postage free card is provided for your convenience in requesting descriptive and informative literature. This will be forwarded to you, without obligation. Many cost saving ideas are generated by Operating Departments that have referenced information on products available. Purchasing Officials will find this type of information invaluable. All that need be done is: fill in name and address, circle that which will assist you, and drop in the mail.

tainer walls. No air can be sucked into the mix, and its low cost has been saved within a single day. We shall be glad to forward you additional information on this dollar-saving tool without cost or obligation.

For more facts request No. 4 on reply card

MOVABLE METAL WALLS

The Mills Company. SPECIAL TO POST AND BASE ENGINEERS. Are you faced with the problem of new offices, walls and partitions with each change of command . . .? Are you short of modification dollars . . .? If your answer is "yes," here is a manufacturer who claims to have the answers to these questions. He has a new 1957 catalog which clearly shows the entire line of Mills Movable Metal Walls, including a new series of aluminum partitions based on an entirely new concept of movable interiors. May we send you this new 68-page catalog without obligation and let you see in detail how these two important questions can be answered with this new equipment?

For more facts request No. 5 on reply card

PROTECTIVE CLOTHING

Wheeler Protective Apparel, Incorporated. (See cuts). Complete

Men, wearing alumnized asbestos fire suits with respirator, carry dummy from mock airplane fire at Midway Airport, Chicago.

Fog nozzles being used by men wearing the aluminized asbestos fire suit. Closer range and thus more effective fire fighting is possible because of this type of suit.

ARMED FORCES MANAGEMENT last month carried an interesting feature by Mr. Harold E. Klontz on the Anniston Ordnance Depot. We did the impossible, and spelled the word Ordnance with an . . . "I" . . . we're sorry.

and detailed information about the "Fire King" suits is available from our library. These impressive photographs explain in themselves how important Wheeler Protective Aparel can be to you and your organization.

For more facts request No. 6 on reply card

CONCRETE FLOOR SEALER

Maintenance Engineering Company. A new, easy-to-apply compound for new or old concrete floors that meets traffic demands of industry and government that contains an anti-bacterial ingredient that meets the most exacting sanitary requirements has been developed. Maintenance Engineering Company claim their new product called Super-Patch, prevents deterioration and disintegration and can be used as an armor for topping new or used floors. Available in colors that are guaranteed non-fading, it is shipped in dry powder form. Additional details are available.

For more facts request No. 7 on reply cards

BLUEPRINT FILES

Stacor Equipment Company. The new line of "Inter-Member" blueprint files is designed to meet the General Services Adminstration requirement that all units shall interlock and intermember with existing units. The manufacturer states the new file will interlock and intermember with many standard cabinets. They are ideal for both active and inactive filing of blueprints, maps, tracings, artwork, drawings, or boards. Coated-fabric covers flatten sheets to keep them from curling and completely protect them from dust and dirt. Drawers are pre-punched for dividers, and roll on case-hardened ball bearings. Catalogs and prices are available for further information.

For more facts request No. 8 on reply cards

AUTOMAX CAMERA

Traid Corporation. This leading manufacturer of photographic instrumentation systems states that although specifically designed to take the punishment of airborne tests, the AUTOMAX has been successful in nearly every type of test and research situation, including photo-panel, scope, tracking, flow, and time-lapse photography. We shall be glad to send you without obligation the complete TRAID catalog describing all cameras and photographic instruments. Fully

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Belco Division

Miller Manufacturing Co.

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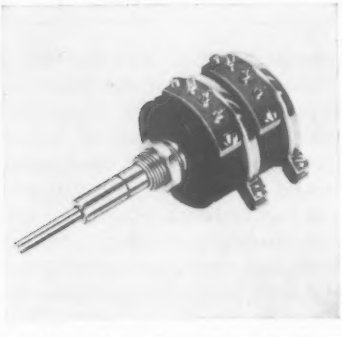
For more facts request No. 20 on reply card

detailed and illustrated technical data together with prices, are included.

For more facts request No. 9 on reply card

CONCENTRIC-SHAFT PRECISION POTENTIOMETERS

Waters Manufacturing Company. (See cut). The new concentric-shaft design, available in Waters precision potentiometers, permits two potentiometers to be single-hole mounted for control by a dual knob. The tandem-mounted



potentiometers have standard ⅛-inch and ¼-inch shafts. The assembly is mounted by the usual ⅜-inch threaded bushing or can be supplied with servo-style mounting. The concentric-shaft potentiometer assembly, Type APC—1⅛, can be furnished with any combination of the resistance ranges available in Waters AP—1⅛ or RTS—⅞ pots, with stops, or for continuous rotation of either or both elements.

Detailed information on this new precision potentiometer is available.

For more facts request No. 10 on reply card

ROTOTIMER

Farmer Electric Products Company. (See cut). The new Model 3 Rototimer was developed to provide a low-cost, rugged synchronous switch to be used for such ap-

plications as punch press control, magnetic counter actuation, shaft synchronization, and register control. It is used primarily in applications where the operate point is carefully set and infrequently changed. The operate point of the switch is adjustable in five degree steps by resetting the cam. Fine adjustment is made by means of an eccentric screw that opens or closes the gap between the standard automotive distributor points, contacts rated 1 ampere non-inductive at 125 volts a-c.

Four types of interchangeable cams are available to vary switching functions.

Overall size of the Model 3 Rototimer is 4 17/32″ long, 3½″ diameter, and 3 9/16″ high. Coupling to controlled equipment is made with a ½″ diameter shaft having a ⅛″ keyway.

For more facts request No. 11 on reply card

"KNOW YOUR CARBURETOR BOOKLET"

Pennsylvania Refining Company. A new forty-six page pocket-size booklet divided into ten sections with detailed illustrations, has recently been published and available without cost. The booklet, originally published in 1952, is now in its fifth printing. It tells in easy-to-understand language exactly how a carburetor works. Common carburetor troubles are covered, with tips on how to correct them. The importance of carburetor care and regular cleaning is emphasized. Over three million copies have been distributed since it was first published and we have a copy available for you.

For more facts request No. 12 on reply card

FIBEROK DISPOSAL CANS

Federal Fibre Corporation. "QUIET COVERS," recently adopted by Federal Fibre Corporation for its nationally distributed heavy duty FIBEROK disposal cans, are a "natural in every place where administrators and executives are fighting to reduce the nuisance of excessive noise.

Snug-fitting, equipped with trunk style leather handles and colored brown or green to match the cans themselves, these covers practically abolish the nerve-shattering clash and clang usually attendant upon waste disposal—an advantage sure to be welcomed by "anti-noise crusaders" in hospitals, institutions and in general business as well.

Covers are made of durable, specially hardened vulcanized fibre and may be had for all heavy duty sizes from 12-inch to 24-inch diameter. Added to the smooth-rolling casters (in themselves a well known noise reducer), these new covers make the FEDCO line most desirable wherever the order is "Quiet please!"

For more facts request No. 13 on reply card

TRUCK CRANE

Truck Crane, Inc., Division of Anthony Company. A new hydraulic truck crane which mounts in a 15″ to 18″ space back of the truck cab, allowing the entire bed of the truck body to be available for load, has recently been announced by this corporation. Having capacities of up to 5000 pounds, the truck-crane appears to have innumerable uses within the military. This low-cost installation will fit on any truck or tractor making it a multi-purpose vehicle. A complete brochure with specifications and prices is available without obligation.

For more facts request No. 14 on reply card

PHOTOCOPIER

Copease Corporation. The first photocopier ever designed to take paper for both normal and brightest office lighting by simply flicking a switch, is the claim of the Copease Corporation. This completely new machine, the Copease Cameo, is made possible by a new light exposure principle developed by this organization. Designed especially for the small office or departmental use, the Cameo is small and compact as well as light-proof. The Cameo makes perfect black-on-white copies in seconds of any original up to 8½ inches in width and any length, in any ink, crayon or pencil, on any kind of paper, colored or opaque, or paper printed on both sides. More detailed information together with prices on this new machine are available without cost to you.

For more facts request No. 15 on reply card

CASE-TERRATRAC CRAWLERS

J. I. Case Company. Three new engineering advancements, which could easily change the entire concept of crawler tractor design, are the claims of this time-honored organization. The new developments referred to technically as "Counter-Rotation," "Torsion Bar Suspension" and "Centralized Lubrication," are incorporated in two new heavy-duty Case-TerraTrac crawlers in the 80 and 100 gross horsepower class. Most dramatic advancement, from an operator's viewpoint, is the new counter-rotating feature of TerraTrac's hydraulic transmission, which provides complete independent power control of each track—both speed and direction. It is now possible to gain production in both directions. A most interesting brochure is available without obligation.

For more facts request No. 16 on reply card

COMMON STOCK INVESTMENT

Hamilton Management Corp. Through Hamilton Funds, Inc., a managed common stock investment fund, this firm offers lump sum or monthly investment plans to fit any budget. Interested persons can inquire without obligation. Firm recently declared another quarterly dividend.

For more facts request No. 17 on reply card

VISUAL CONTROL BOARD

Wassell Organization, Inc. Produc-trol not only schedules but automatically checks with time, line, and color control, has low original and upkeep cost.

For more facts request No. 18 on reply card

VISUAL MANAGEMENT CONTROL

Graphic Systems. This New York firm invites men interested in efficient management to get things done with Boardmaster Visual control which gives a graphic picture of operations, spotlighted in color, saves time, money, and stops errors.

For more facts request No. 19 on reply card

BELCO REPLACEMENT FAUCET STEMS

Miller Manufacturing Company. Leaking compression type faucets, lost water and excessive maintenance costs are gone forever with the installation of Belco ball bearing replacement stems, complete with bibb washers. The bibb washer is only under compression and is not subject to cutting or grinding action.

For more facts request No. 20 on reply card

MUTUAL INVESTMENT FUND FACTS

Brown, Madeira, and Company. This company, specializing in mutual investment funds, will send, without obligation, facts about conservative, middle-of-the-road, and aggressive types of investments and mutual funds.

For more facts request No. 21 on reply card

FILING CABINETS

Wassell Organizations, Inc. Cut your office force filing time in half, save up to 40% in space with Corres-File. Revolutionary filing equipment takes your file clerk out of the laboring class and saves you 50 cents of every dollar you now spend.

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Vogel-Peterson Company. Hold more wraps in less space. Write for Bulletin CK455.

For more facts request No. 23 on reply card

UTENSIL WASHER

Food Machinery and Chemical Corp. FMC Utensil Washer gives real manpower savings, cuts wash time, saves water.

For more facts request No. 24 on reply card

INCOME FUND

The Keystone Company. This leading eastern investment firm offers Series K-1, a diversified investment in securities selected for current income.

For more facts request No. 30 on reply card

● Moving payday to Monday apparently cuts down absenteeism. According to a study made by the Merchants and Manufacturers Association of Los Angeles, Monday's average absenteeism is 3.3 per cent. When Monday is payday, however, absenteeism drops to 2.6 per cent.

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For more facts request No. 30 on reply card

THE "TEXTBOOK" OF ATORGENICS

The monograph, "Organization — From Empiricism to Principle," is available in book format. It has been re-edited and reprinted from its first publication in six installments in *Armed Forces Management* magazine; and some supplementary material has been added.

The mongraph is the present "textbook" of *Atorgenics*, and reference to it will be made from time to time in future issues of *Atorgenics Aspects* in connection with the discussion of certain phases of the problem of the organization for human enterprise.

The monograph will be sent postpaid upon receipt of your order with remittance at $2.50 per copy. Address: The Academy of Organizational Science, Business Office, 203 Greenlawn Drive, San Antonio 1, Texas.

Management Briefs

(*Continued from page 39*)

search and Development and formerly commanding general of the 82nd Airborne Division, participated in the dedication. Many former commanders were in attendance at the affair under the direction of the Division Historical Society.

USS Randolph (CVA-15) FPO New York. The "Clansmen" VA-46, now on duty with the Sixth Fleet in the Mediterranean, claim a list of "firsts" which include, the first designated jet attack squadron in the Navy, the first operational squadron to carry an atomic weapon on the Cougar, first with a real capability in handling air-to-air guided missiles, the first operationally deployed squadron to night qualify using the mirror landing system, and last, the first completely equipped with TACAN. All of these in approximately 13 months is indeed quite a record.

Charleston Air Force Base, South Carolina. On March 1st Charleston will become the terminal and aerial port of embarkation for passenger flights to Bermuda, French Morocco, Libya, and Saudi Arabia. The move designated by Headquarters Military Air Transport Service will lighten the load at McGuire Air Force Base in New Jersey.

Marine Corps Schools, Quantico, Virginia. 376 new Marine officers joined the corps last month with the graduation and commissioning of the 17th Officer Candidate's Class. Lt. Gen. Merrill B. Twining, Commandant of Marine Corps Schools, spoke at the ceremony and presented commissions to the class.

Naval Air Test Center, Patuxent River, Maryland. Rear Admiral Thurston B. Clark, USN, has assumed command of the Naval Air Test Center relieving Rear Admiral C. H. Duerfeldt, who has been assigned as commander of Carrier Division Two. Admiral Clark arrived from the Pacific Air Force.

Armed Forces Staff College, Norfolk, Virgina. The Air Force has chosen 63 lieutenant colonels as principals for the 1957-58 course at the Staff College, and named an additional 16 officers as alternates.

San Francisco Naval Shipyard, California. Captain C. E. Trescott, USN, shipyard commander recently presented Mr. Mark Ferry a check for $300 for an idea estimated to save the shipyard alone $22,000 within the first year. Mark (an ordnance engineer) determined that alteration to the gun directors aboard yard-overhauled destroyers was a time-consuming and costly procedure. By study he also realized this work could be done aboard ship and thus save a large percentage of the cost. The ideas merged and Mark has the $300 and the Navy has a big saving.

Hamilton Air Force Base, California. Hamilton received Air Force recognition last month for their 59 percent participation in the base's civilian suggestion awards program. Placing first within the Air Defense Command and ninth among ZI installations, Hamilton exceeded the Air Force-set goal of 20 percent during FY 1956. Marking the achievement of Hamilton's employees in a short ceremony in his office, Brig. Gen. Monro MacCloskey, 28th Air Division Commander, presented an Air Force plaque to Colonel Wilton H. Earle, Commander of Hamilton Air Force Base. During the period for which cited-civilian personnel received $1,185 for suggestions submitted which are estimated to result in first-year savings of $14,878.45.

Belle Mead General Depot, Somerville, N. J. Colonel John W. McDonald, Depot Commander, recently presented certificates to graduates of the Supervisors Development for Middle Management Supervisor Training Course. To date 18 supervisors have completed the 25-hour course designed to increase the ability of supervisory personnel in the art of supervision and to provide a better understanding of problems and methods employed in their solution.

Navy Officer Candidate School, Newport, R.I. The Navy gained 920 new ensigns just before Christmas when the 29th Class of the Officer Candidate School graduated. Vice Admiral Charles Welborn, Jr., USN, Commander, Second Fleet, welcomed the new men and presented awards to the top 20 men in the class. Of the total number 567 will report to ships, 91 to aviation ground billets, and 179 to engineering and staff corps duties. The remaining 123 will enter special programs such as guided missiles, salvage, security and underwater demolition studies.

Fort McClellan, Alabama. An impressive list of educators, industrial, governmental, and military leaders in the field of management were the lecturers for the first Management Sub-course to be included in the Associate Chemical Officer Advanced Course at the Chemical Corps School at Fort McClellan. Colonel Carl V. Burke, Commandant of the Chemical Corps School, opened the course and spoke on "Integrating Principles of Management-Decision Making."

Perrin Air Force Base, Oklahoma. Perrin boasts a real winner in the suggestion program. Dan Coffey, Quality Control Inspector-Foreman, recently received a $2,205 award for solving a problem of faulty maintenance on the F-86D Sabre Jet marker beacon antenna dehydrator system. Proper inspection and maintenance required hours of work, and Coffey's idea to relocate the case of crystals used to indicate excessive moisture, now requires but 30 minutes. It is being used on similar planes being manufactured as well as those in use with a savings to the Air Force of $1,576,890.00.

Fort Benjamin Harrison, Indiana. Major General Emmett J. Bean, USA, who has been Commanding General of the Finance Center since its establishment at the post in 1952, has taken command of the entire post. General Bean will be responsible to Headquarters Fifth Army, for operation of the installation, whose primary mission is providing logistical support for the Finance Center, Finance School, The Adjutant General's School, and the Indiana Military District.

STARTS WITH A BANG!

A mere flick of a bar sets off a special 37 mm charge under his seat . . . and the jet pilot hurls himself high into the air on this ejector trainer. This training, supervised by skilled technicians, may save his life at a later day when there are only seconds to act. Such specialized personnel must be moved to new assignments swiftly . . . the *best way* is to fly them by the fast, dependable Scheduled Airlines. So, if you're moving one man or many, call your Scheduled Airlines representative. You'll save pay and per diem dollars . . . and your men will be ON THE JOB . . . not "on the way."

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DEPENDABLE, SCHEDULED SERVICE SAVES MILLIONS OF VALUABLE MAN HOURS FOR THE MILITARY

Book Reviews

by D. D. Corrigan

Investment Analysis

"APPRAISAL AND MANAGEMENT OF SECURITIES," by Douglas A. Hayes (Macmillan, 383 pages, $6.00).

This reviewer would like to have the opportunity of meeting Douglas Hayes personally to thank him for his book, "Appraisal and Management of Securities." At last a book has appeared on the market that takes into consideration the fact that many people have a basic understanding of stock and bonds and require dependable information on a high intelligence level. Many of the books today on the subject of investments seem to be aimed at the uninitiated person who knows nothing about Wall Street. Worthy contributions, perhaps, but the person who desires further facts and appraisals has often been forgotten. Thank you Mr. Hayes for directing your book to the executive, to the experienced businessman, to the serious investor who wants to increase his understanding of theories, principles, and techniques of security management.

Mr. Hayes states strongly his case that sound judgments and clear decisions through training and experience leads to successful investments rather than intuition, guessing or luck. The investor who seriously considers "tips" and "inside dope" as valuable advice is not wise or even liable to be successful. Mr. Hayes does not write for the person who wishes to find a "sure-fire" way to make money quickly by cleaning up on the stock market. Mr. Hayes also does not write for the casual reader who will only glance rapidly from page to page. This book is for the informed, and the one who will take the necessary time to read every word for a complete understanding.

Concentration is made by the author on "outside" investments in industrials, but he explains that the same techniques used to analyze industrial securities can be used for other types of securities. He chooses to discuss mainly industrials because he feels that within this field there is rising importance, a large choice and variety. Each investor in this field is dependent upon the future "profitability" of a company and must keep aware of new developments that can change the future results.

While investments can be divided into two classes, the fixed income and the equity or common stock type, Mr. Hayes outlines the advantages and disadvantages as to bonds, preferred stocks, common stocks, and convertibles. This is followed by an appraisal of investment characteristics. "That part of the investment process concerned with the appraisal of the individual company and its securities really consists of two distinct steps. First, there is the problem of appraising the intrinsic quality of the company as an investment medium. This will be the subject of the second section and will be concerned with a number of specific factors which bear on this matter. There are, to mention a few, the questions of competitive position, management capacity, growth prospects, stability, and financial position; all of which are relevant to this phase of the analysis process."

The author goes on to say that the "valuation process, the subject of the third section, is equally if not more important. This goes one step further in that it attempts to translate all the evidences of investment quality, both positive and negative, into estimated values for the securities. The importance of this phase becomes evident when it is realized that all intelligent investment decisions must be related to the prices at which the securities are available in the market. Implicity or explicity, the only basis for this decision is a comparison of the probable values, independently determined, to the prices in the market place."

The investment portfolio is rightly left to the final section, for Mr. Hayes feels that portfolio planning can only come after a complete understanding of the essential characteristics of securities.

Who Is This Man Called Eden?

"PORTRAIT OF A STATESMAN," by Dennis Bardens (Philosophical Library. 326 pages, $6.00).

When an author writes a biography of a living person certain advantages and disadvantages are obtained. The long-range viewpoint to make an interpretive summary of contributions and evaluations is not possible while the subject is actively engaged in his career. Often after the book is published, events happen that can change or modify the author's appraisal. On the other hand, the author should be able to narrate the "feel" of the times because the author is a part of the same period. Also the writer may know the subject personally or at least can give a living portrait, fresh and current, rather than a biography drawn from research. Readers demand studies of contemporaries for information and understanding.

Mr. Bardens does give a refreshing view of Sir Anthony Eden, more of an intimate look at a man whose life has been closely associated with the British Empire. "The forebears of Sir Anthony Eden include diplomats, a novelist, reformers, artists and sportsmen. The thread of continuity, which runs like a golden vein through the history of this remarkable family, is leadership." It has been said that to know a man you must know something of his parents. Eden's father was egotistical, outspoken in his remarks, hypersensitive, courageous and above all honest. A revealing picture is seen of Sir William Eden when he first received the news that his eldest son John had been killed in action in France. He showed no trace of emotion, only looked at the flames in the fireplace and muttered, "A fine death." That was all he said. His mother was

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charming, beautiful, gracious. Perhaps it was the blending of two such opposite persons that resulted in the quiet, intelligent, dreamy boy who had the advantages of good looks, ability to concentrate to the exclusion of everything else, grace, good connections, money, and education.

At the age of twenty-one Anthony Eden decided to make politics his career. He was not successful in his first campaign, but when he was chosen by the Conservatives as a candidate for the Warwick and Leamington constituency, his election was a great victory for him. He has held this constituency ever since. In the middle of this campaign Eden took time out to marry Beatrice Beckett. Now that he was married and a member of Parliament, he settled down and began to climb the political ladder.

Eden developed early in his career the habit of thinking carefully and planning everything out before making decisions. He did not speak or act on the spur of the moment. He avoided controversial subjects, and tried to advance his ambitions by cultivating older and influential men. He was always a hard worker, spending ten to twelve hours a day when he was at the Foreign Office. Soon he was promoted to the office of Lord Privy Seal, to Cabinet rank, and then to Foreign Minister. When he resigned from the post of Foreign Minister, he was acclaimed by the people as a hero. Under Churchill Eden was given more and greater responsibilities, until at Churchill's retirement, Anthony Eden was made Prime Minister.

While his career was advancing steadily, his marriage did not survive the period of many meetings, conferences, travels, all the duties that kept him away from home. Church circles attacked his second marriage to Clarissa Churchill, but Eden's popularity with the people and the uniting of two great names, won public approval.

Mr. Bardens claims "Sir Anthony Eden is one of the best known, yet least understood men in the world." "Portrait of a Statesman," helps to correct this, with an intimate look at Sir Anthony Eden, and an explanation of his achievements, his difficulties, his decisions, his policies.

Vital Information

"PENSION AND RETIREMENTS RIGHTS," by Colonel Stephen F. Tillman, USAR, (53 pages, $1.00).

Here is a short but compact book for military personnel and their families on pensions and retirements. Complete monthly pay scale charts are given for officers, warrant officers, enlisted persons. Hazard pay rates and one day drill pay per grade tables are outlined. Active Duty Retirements covers nondisability retirement, disability retirement, Veterans Administration Disability Compensation, separation and severance pay, and readjustment pay.

The next section of this book takes up the subject of National Guard reserve retirement in terms of basic requirements, service not creditable, how points are earned, failure to remain active, an example in computing retirement pay. Survivors' Benefits takes up family benefits, VA indemnity compensation, death gratuity, payment to parents, choice of options, location of national cemeteries, pension, remarriage, definition of child, burial benefits, burial of minor children.

Veterans Benefits explains service-connected disability, peacetime service, nonservice-connected disability, lost checks, hospitalization benefits, veterans administration homes, guardianship services, and appeals. The chapter on social security is clear and concise and includes old-age and survivors insurance benefits, gratuity social security coverage, military retirement with social security added, and guidance on filing application for social security benefits.

To protect you and your family it might be a good idea to file a copy of this instructive book with personal papers. Each serviceman or veteran must assume the responsibility of learning for himself the benefits to which he is entitled. Col. Tillman's book should be of great help.

Elucidation

"ATOMIC ENERGY," by E. C. Roberson and A. Radcliffe (Philosophical Library, 142 pages, $4.75).

This may be a small book, but it is weighty in subject matter. It proves that a book need not be long and tedious, but can be compact and thus often more easily understandable and interesting. The opening chapter describes clearly what an atom is and explains the atomic-molecular theory. This leads

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to what atoms are really like and goes on to discuss atoms that explode.

Throughout the book the authors tell, in chronological order, the discoveries and theories that scientists throughout history have made to culminate in today's conception of atomic theory. The many ways of changing or building atoms with a resulting net change of weight are described and an idea is given of the power and destructive ability of atomic bombs. Chapters of Fissions Controlled, "Piles," and Uses of Atomic By-products help tell the complete story. Atomic Power in the Future may contain some guesswork but the scientific approach that prevails all through this book makes the material seem extremely possible.

Recommended Books:

"HOW TO WIN SUCCESS BEFORE FORTY," by William G. Damroth (Parker Publishing Co., $4.95).

A new formula for achieving success early in life. This book is based mainly on one important fact—to achieve success you must combine the abilities of a mature executive with the dynamic advantage of youth.

"THEY MET AT GETTYSBURG," by Edward J. Stackpole (Eagle Press, 360 pages).

An account of a battle, the telling of which never grows dull. A condensation is given of the highlights of the battle, with photographs and sketches to aid the reader. Nineteen situation maps show troop dispositions at every important phase of the battle. The narrative gives interpretations of the controversial features of the engagement.

"AUTO-CONDITIONING," by Hornell Hart (Parker Publishing Co., $4.95).

Dr. Hart is a professor of Sociology at Duke University who has written a guide to a new way to a successful life through auto-conditioning. How to keep your mind alert and efficient, to see through problems quickly, a way to renew your inner strength. This is a method of conditioning the enormous power of the mind resulting in health, strength and happiness.

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An authoritative account of the contributions of British scientists to World II. How and who aided in the development of radar, the atomic bomb, submarine detection through ocean echoes. Subject matter is based on official documents assembled by the Scientific Advisory Committee to the British Cabinet.

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A true story of adventure, telling the tale of this couple who bought a Cessna 180, had it shipped to Paris, and then flew on a 50,000 mile trip to seldom heard of places and familiar sites.

"A SPACE TRAVELER'S GUIDE TO MARS," by I. M. Levitt (Holt, 175 pages, $3.50).

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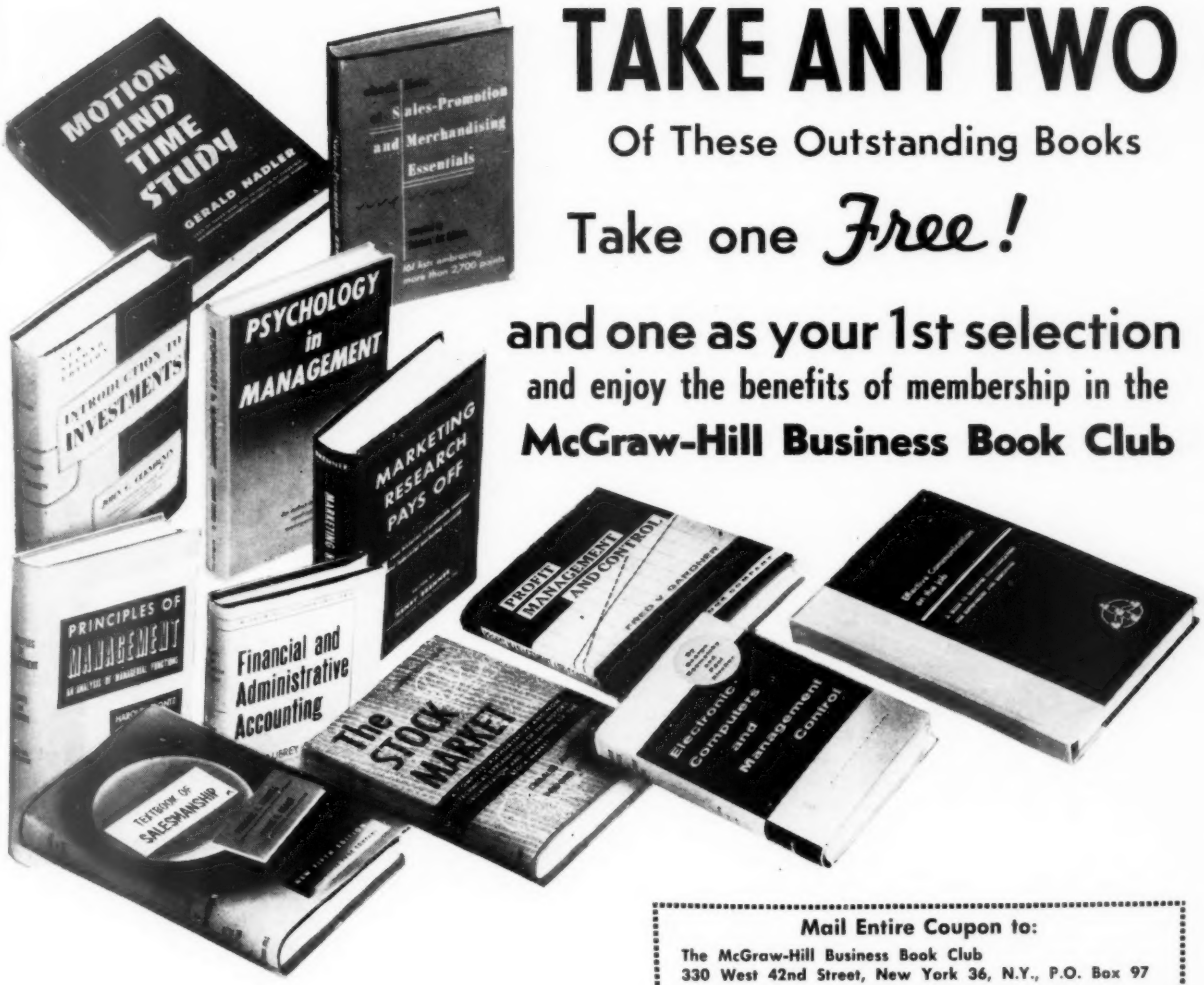

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